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■ H. E. CHURCHILL *(M '41) has been connected with Studebaker for fifteen years, and engaged in the development and testing of all chassis items, except powerplants and electrical equipment. Previous to his employment with Studebaker he was with Dodge Brothers approximately one year where he worked in the chassis design division.*

(Concluded on page 36)

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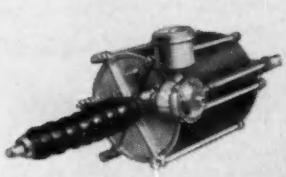

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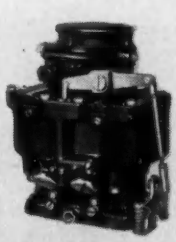

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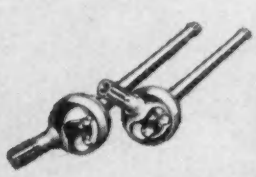

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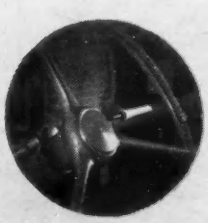

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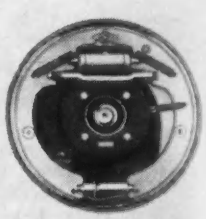

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MINIMUM SUPPLY of CRITICAL MATERIALS VITAL for CERTAIN AUTO PARTS

AS tonnages of critical materials saved for defense by substitution of alternate materials in automobiles mount daily and as the liaison between OPM officials and automobile engineers becomes closer, it is becoming increasingly evident that a *minimum* supply of some critical materials is essential if passenger cars are to continue to be produced *in any quantity*. Alternate materials cannot be substituted in certain parts without greatly reducing quality and performance; causing long production delays; employing machine tools, toolmakers, and skilled machinists urgently needed in defense work; and/or adding greatly to expense. Among the most important of these parts are:

Deep-Drawn Body Parts – Many 1942 cars require a steel for certain body parts that is "killed" or degasified with 5 to 6 lb of aluminum per ton. The deep draws necessary in forming such fenders or similar body parts cannot be made with "rimming" (partially deoxidized but not degasified) steels containing less aluminum. Attempts to form these parts of rimming steel have resulted in a prohibitive percentage of scrapped parts, even when heavier gages of steel are used. In order to use these rimming steels, huge new dies (costing up to $125,000 each) would have to be made, requiring toolmakers urgently needed for defense and a delay of from 4 to 6 months. In some cases, fenders now made as a unit would have to be made in two pieces, and the amount of hand work increased. Secondary aluminum can be used to kill the steel.

Per cent of July 1941 – July 1942 secondary aluminum supply needed for both killed and rimming deep drawn steel of 1942 automobiles (as designed at present) –

Assuming 20% less produced than in 1941 model year . . . approximately 1.44%.

Assuming 50% less produced than in 1941 model year . . . . . approximately 0.9%.

Radiators – When zinc became critical months ago, many brass radiator water tubes and upper and lower tanks were replaced by those of copper. Recently copper itself has been placed under mandatory priority, and the zinc situation has become somewhat easier. Whether or not automobile engineers will return to brass for radiators depends, among other things, on the brass-sheet rolling capacity that will be required for ammunition. In the case of one car with a highly efficient radiator cooling constant, a change from copper to brass paradoxically would require more copper in the brass than used previously in the all-copper radiator. Because of the lower thermal conductivity of brass, the depth of the core would have to be increased to such an extent to obtain the same cooling, that the radiator would contain more copper. Return to brass, if available, for upper and lower radiator tanks, however, would effect some saving of copper on all radiator installations. Either brass or copper is essential for radiators for two cogent reasons:

1. Steel and other possible substitutes have a considerably lower thermal conductivity, and thus would lower the cooling capacity of cars to a point that would seriously affect performance.

2. Steel, even though terne-plated or coated with corrosion-resistant paint, would corrode through and leak in a relatively short time.

Per cent of July 1941 – July 1942 copper supply needed for radiators of 1942 automobiles (as designed at present) –

Assuming 20% less produced than in 1941 model year . . . . . approximately 2.7%.

Assuming 50% less produced than in 1941 model year . . . . . approximately 1.7%.

Exhaust Valves – Automobile valve engineers have done a commendable job in the last few months in reducing the nickel in exhaust valves to a maximum of 1½%, or in eliminating the nickel entirely, to conserve nickel for defense. In one case where the nickel was eliminated completely, the hot strength of the valves was lowered enough to necessitate a deeper cantilever section in the valve head and, consequently, a heavier valve. Frequently, the percentage of chromium in the exhaust valve was increased to compensate somewhat for the decrease in nickel content.

Now that chromium has become a critical material placed under OPM control, valve engineers are seriously concerned about the supply of this metal for exhaust valves. Eliminating or reducing materially the

(*Continued on page* 18)

Some quantity – small in most cases – of "critical" metals is essential to adequate safety, life, and performance of cars and trucks. This up-to-the-minute study tells why . . . and how much.

★ ★ ★ ★

OPM Shapes Up Its Auto Advisory Set-Up

EVER since the original meeting of the Automotive Defense Industry Advisory Committee on July 23, leading automobile men have been spending an appreciable number of man-hours in Washington conferring with OPM and OPACS officials. As sub-groups swing into action and contacts with the government become more routinized the detailed objectives of each specific group will be better clarified.

Specifically, the ADIAC is an advisory group for the automotive division of the Automotive, Railroad, and Agricultural Equipment Branch of OPM – which is headed by James S. Adams, executive vice president of Colgate-Palmolive-Peet and formerly an executive of Johns-Manville Corp.

To date, there have been meetings of four groups subsidiary to the main ADIAC (which consists of 11 members representing the car and truck industry and 8 members representing the parts and accessory industry). Two of these four subsidiary groups have been formalized as subcommittees of ADIAC. These are the passenger-car subcommittee and the motor-truck subcommittee. The other two subsidiary groups are (1) a manufacturers' group to discuss labor problems and (2) a technical group representative of car, truck and bus companies which is dealing with utilization of alternate materials to replace those most needed in defense. Thus far (8/21/'41) these groups are meeting on an informal discussion basis and are not official OPM-appointed subcommittees.

It is understood that a technical group may be set up in the near future to deal with removal of critical materials from tractors, industrial engines, and marine engines, functioning along lines similar to those already covered by the passenger car, truck and bus technical group.

The ADIAC is one of about 30 industry groups already named by OPM to advise. Its basic functions are clear. It was named by OPM to:

- Advise, when called upon to do so, OPM officials;
- Advise other government agencies such as OPACS, the Army, Navy and other departments about the facilities of the automotive industry in respect to defense problems. This is supposed to preclude having duplicate advisory committees.

Will Analyze Facts

Fact finding, and interpreting the facts, is the Number One job of the Committee. Kaleidoscopic changes in the degree of the criticalness of certain metals on the one hand and the pyramiding of government orders on the other require the closest possible OPM-industry contact to effect the metamorphosis of making the world's largest peacetime manufacturing business a major department in the national arsenal.

The Automotive Defense Industry Advisory Committee cannot:

- Initiate action;
- Determine industry policies;
- Compel compliance with OPM orders.

Anti-trust laws put definite limits upon the extent to which members of an industry may participate in limiting production, allocate orders, or exercise other functions demanded by the national emergency. These things the OPM can do and is doing. Now, these actions will be done by OPM upon the accepted advice of the Advisory Committee.

Members of the Automotive Defense Industry Advisory Committee, with SAE members in italics, are:

R. I. Roberge, Ford Motor Co.; Donaldson Brown, vice president, General Motors Corp.; *B. E. Huchinson*, vice president, Chrysler Corp.; *Paul G. Hoffman*, president, Studebaker Corp.; George W. Mason, president, Nash-Kelvinator Corp.; *Joseph W. Frazer*, president, Willys-Overland Motors, Inc.; *A. E. Barit*, president, Hudson Motor Car Co.; W. F. McAfee, International Harvester Co.; E. J. Bush, vice president, Diamond T Motor Car Co.; *R. F. Black*, president, White Motor Co.; R. P. Page, president, Autocar Co.

Members of the parts section of ADIAC are:

C. S. Davis, president, Borg-Warner Corp.; *C. C. Carlton*, vice president, Motor Wheel Corp.; Burke Patterson, Thompson Products Co.; *Col. Willard F. Rockwell*, chairman, Timken-Detroit Axle Co.; W. P. Brown, president, Briggs Mfg. Co.; C. E. Hamilton, president, Automotive Gear Works, Inc.; J. D. Eby, vice president, Wagner Electric Corp., and H. R. Kerans, president, K-D Lamp Co.

Members of the Passenger Car Subcommittee are:

I. T. O'Brien, Chrysler Corp.; R. C. Cosgrove, The Crosley Corp.; Thomas W. Skinner, Ford Motor Co.; Donaldson Brown, General Motors Corp.; *H. Murray Northrup*, chief engineer, Hudson Motor Car Co.; W. F. Armstrong, Nash-Kelvinator Corp.; M. M. Gilman, Packard Motor Car Co.; *Paul G. Hoffman*, president, Studebaker Corp., and *J. W. Frazer*, president, Willys-Overland Motors, Inc.

Members of the Motor Truck Subcommittee are:

M. E. Coyle, general manager, Chevrolet div., General Motors Corp.; L. D. Cosart, Dodge div., Chrysler Corp.; R. E. Burns, Ford Motor Co.; Charles T. Ruhf, vice president, Mack Mfg. Corp.; *I. B. Babcock*, president, Yellow Truck & Coach Mfg. Co.; E. J. Bush, vice president, Diamond T Motor Car Co.; W. F. McAfee, International Harvester Co.; Fred T. Macrae, executive vice president, White Motor Car Co., and T. R. Lippard, president, Federal Motor Truck Co.

OPM Automotive Boss

Underwood & Underwood

James S. Adams

Jim Adams has been down in Washington helping OPM since about May 1.

Since then he has organized the rubber industry for maximum coordination with the defense program, recently completed a similar job in connection with the paper and pulp industry, and has his automotive industry assignment well on its way. In a few minutes' spare time on Monday mornings he keeps rightside up his regular paying job as executive vice-president of Colgate-Palmolive-Peet.

His mind grasps essential facts about unfamiliar subjects with amazing accuracy – and his sales and advertising training makes him forcefully articulate in passing on that information. He hits hard and straight, has no use for the trappings of executive authority, laughs readily, and sees through sham unerringly.

He works indefatigably, makes a briefcase his office, and gets his associates to enjoying long hours and hard work. He is great for cutting red-tape but equally good at tying that same tape up into neat, efficient little bows when it can't, in the nature of things, be disposed of readily.

Transport Experts Outline Tasks

WITH the announcement of four major subcommittees, the Central Motor Transportation Committee moved into its second organization phase late last month. The four major programs which have already been started are:

- Classification of Truck Use or Service, with Thomas H. MacDonald, Commissioner of the U. S. Public Roads Administration, as chairman. It is expected that "use ratings" will be granted to fleets doing important defense work, favoring such operations in respect to priorities in securing new equipment and parts.
- Efficiency of Truck and Bus Use, headed by D. L. Sutherland. The questions of load factors, eliminating empty trips, increasing the number of hours per day for deliveries, and a program for pooling equipment, are among the studies already begun.
- Standardization, Design and Construction, and Preventive Maintenance, under the chairmanship of T. L. Preble, SAE Vice President in charge of the Transportation & Maintenance Activity, is a many-faceted program now underway, involving correlation of work done by the industry and requiring new studies.
- Plan for Allocation of New Trucks and Trailers Between Purchasers in Periods of Shortage, is the program assigned to a subcommittee headed by Frederick C. Horner. This extremely delicate project will require studies of the relative value of fleets for the defense effort, and may involve studies of the intensity of use of motor vehicles.

Already the Central Committee has submitted a proposed priority plan to the OPM, permitting the issuance of priority parts and materials orders through various subcontractors and suppliers – down to the ore. Under this scheme, which has been used in aircraft and other defense purchases, the truck, bus, tractor, or trailer builder will be able to get materials and parts for units bearing a high priority with a minimum of paper work, if approved.

✪

"Clinics" Explain Priorities

Many an automotive manufacturer can benefit from the series of OPM Priorities Clinics currently being held throughout the United States. These are staged to tell the individual manufacturer how he can operate to get the best results.

Round table discussions, pointed up to immediate problems faced by the manufacturer, are a feature of these clinics. Experts of various OPM services are on hand to answer questions.

This procedure was charted by the first Clinics held in the Greater New York area August 14 and 15. William S. Knudsen, OPM Director General, jolted an audience representing 52 holders of large contracts and 964 concerns wanting defense work when he said that by 1943 defense production will reach a staggering $30 billion, or nearly one-third of the total productive capacity of the country. About $9 billion of defense production has been accomplished during the past 12 months.

Detailed information about prospective clinics is available at the Defense Contract Service offices in Federal Reserve Branch offices. Many automotive men went to Washington for such a clinic on Aug. 22.

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"Hot" Materials

THERE remain few, if any, materials used in the production of automotive equipment – either for civilian or defense use – about which Uncle Sam has *no* shortage worries.

A few months ago automotive designers started designing away from "critical" materials. Today practically every material is critical – or may become critical shortly. To design away from all of them is impossible. Automobile designers already have designed themselves in circles on several items. Today's problem is to design away from the *most* critical – and the heat seems certain to be on different materials every month or two.

The only sure thing is that the situation as regards each material will continue to undergo constant change. Nevertheless, that is the problem – to be met as best can be.

As this issue of the SAE Journal goes to press, the best information available from Washington indicates that among the materials Uncle Sam would most like civilian designers to stay away from until further notice are:

- Copper
- Aluminum
- Nickel

The zinc situation has eased slightly, but existing restrictions must remain. Chromium is said to be getting tighter by the day. Tin is more readily available than any of these materials just mentioned – but is scarce. Pressure on rubber will be growing from now on.

By the time serious government restrictions go on a material, it is usually too late for the designer to make substitutions without seriously disrupting either production or performance. Liaison between designers and government statisticians gives promise of improving as time goes on, so that better advance information may be made available. The SAE Journal will continue to engage in performing a part of that liaison function.

✪

OPM Promotes Wider Use of "Special" Tools

Thirty-four Defense Contract Service coordinators throughout the country are unselling the bugaboo of "special" machine tools, pointing out that most manufacturing machinery is of basic standard types which have become specialized only by the addition of special jigs, fixtures, and tools to do specific jobs.

Experts of the Service have estimated that something like 70% of the automotive manufacturing machinery is "special" only by virtue of special fixtures which are quickly removable. The percentage in most metalworking shops is even higher, they point out.

Progress is being made by DCS in developing among subcontractors and potential bidders on government work a "community" effort, obtaining greater intensity of use of machinery by shipping unfinished parts to various shops where certain specialized work can be done better.

Often, for example, a coordinator or staff man of the Service helps a subcontractor to find a manufacturer with available heat-treating, grinding, or other equipment needed to complete a given part.

✪

SAE Man Named Transport Adviser

R. J. Collins, superintendent of transportation, Kansas City Power & Light Co., has been appointed a member of Regional Committee No. 10, Central Motor Transportation Committee, headed by John L. Rogers, chairman, and Interstate Commerce Commissioner

Defense Standards and Simplification

A Standards Section, formed under the OPM Division of Purchases by Director of Purchases Donald M. Nelson, correlates industrial standards and simplification recommendations in the interest of national defense.

★

Recently a Standards Section has been established at OPACS.

★

As far as can be ascertained, the Division of Simplified Practice of the Bureau of Standards – established in 1921 – is not engaged in any new program growing directly out of national defense. It is understood, how-

ever, that this Division is studying the operation of the various standards activities generated by the defense effort.

★

A recent letter from Assistant Attorney General Thurman Arnold to Under Secretary of Commerce Wayne C. Taylor says: "In my view continued adherence to the specific purpose of simplification will not raise any questions under the Federal anti-trust laws," thus allaying fears of anti-trust prosecution which might follow attempts to reduce types and sizes of products offered by manufacturers to the government.

✪

OPM to Reduce Steel Specs

A REDUCTION in the number of steel specifications with a view to expanding production of this basic defense material is the objective of a project now under development in the Office of Production Management.

Plans for the conduct of the project were discussed early in August in a meeting called by Roy Whitney, chief of the OPM Iron and Steel Section. Present at this meeting were representatives of the American Iron and Steel Institute, the American Society for Testing Materials, and the SAE.

According to the tentative program developed at this meeting, the project will use the existing specification structure as its base and will retain in so far as possible systems of designating various steels with which industry and government agencies are familiar. Moreover it is planned to allocate the work to existing groups most familiar with the various classes of steel, such as the ASTM, the SAE, Army, Navy, etc.

Final action has not been taken on the project by OPM as this is written. However, when the "go ahead" is given, it is hoped that intensive work will complete the job in 60 to 90 days. When completed, according to Mr. Whitney, it is anticipated that steel mills will produce only to specifications on the simplified list.

SAE representatives in Washington for the meeting were President Colwell, Frank Gilligan, chairman, Iron & Steel Division of the SAE Standards Committee, John A. C. Warner, SAE general manager, and Don Blanchard of the SAE Headquarters Staff.

✪

DCS is Now An OPM Bureau

Defense Contract Service, the hard-hitting OPM agency which is showing industry the "how" of subcontracting and sub-subcontracting, has been elevated to a bureau, remaining under the jurisdiction of R. L. Mehornay, chief.

William E. Levis, acting chairman of the Production Planning Board has been appointed by Knudsen-Hillman to assist Mr. Mehornay in expanding the new bureau and to integrate it more closely with the Army and Navy, and with all divisions and certain subdivisions of OPM.

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First booklet for adapting the program of the Office of Civilian Defense to towns and cities, including a model municipal ordinance, explains the functions of this defense agency, shows addresses of regional offices. Copies available from the Office at 2000 Massachusetts Avenue, Washington, free. Other pamphlets will follow

Factory Kwh Needs Appear Satisfied

PARADOXICALLY, the nation's effort to get enough electrical energy to produce sufficient quantities of aluminum and magnesium for the national defense aircraft program is a problem which has no immediate effect upon automotive manufacturing, experts of the new OPM Power Unit told the SAE Journal.

In most cases the geographical areas affected by the prospective power shortages for reducing bauxite to aluminum are far removed from automotive plants.

Assuming that the defense manufacturing effort will swing into two and three shifts per day, power experts point out that there will be ample power capacity to handle the situation, with some minor adjustments such as reducing the street lighting, electrical signs, and some air-conditioning requirements. The existing generators will simply continue to run instead of being shut down for part of the day when the manufacturing of military equipment gets into its stride.

The new federal Daylight Saving Law, urgently supported by OPM experts, will go far to relieve several prospective shortages. No good would come of a ukase asking that offices and factories open an hour or two earlier during this emergency, OPM power men agreed. The element of human nature would prevent any real savings, because the living habits of the populace would simply result in a longer day with continued electrical consumption far into the night.

An intensive study of detailed power use in and around Detroit, Cleveland, Toledo, Buffalo, New England, Chicago, and St. Louis is now in progress with the hope that more light might be focused upon the defense impact on the nation's power networks.

SAE-QMC Maintenance Group to be Formed

At the request of Major General E. B. Gregory, the Quartermaster General, the SAE will form an SAE-QMC Motor Maintenance Advisory Committee along the lines of the SAE-QMC Advisory Committee.

"The enormous expansion of our Motor Transport under the National Defense Program has created another serious problem – that of maintenance," General Gregory wrote President A. T. Colwell. "A motor maintenance committee, organized along the same general lines as the existing committee, would be of material aid in our work of maintaining the vast number of vehicles now on hand in the Army."

The General urged early consideration. Authorization was given for such emergency committees by the SAE National Defense Committee in June at White Sulphur Springs.

DEFENSE IMPACT ON INDUSTRY

Critical Materials

(*Continued from page* 15)

amount of chromium in exhaust valves, they contend, would lower greatly the heat resistance of the steel to a point where the valve life would be reduced greatly because of burning out and breakage, and frequent regrinding and replacement of valves would be necessary. Furthermore, redesign of the valves probably would be required, possibly affecting the design of related engine parts.

Per cent of July 1941 – July 1942 nickel supply needed for exhaust valves of 1942 automobiles (as designed at present) –

Assuming 20% less produced than in 1941 model year.....less than 0.036%.

Assuming 50% less produced than in 1941 model year.....less than 0.023%.

Per cent of July 1941 – July 1942 chromium supply needed for exhaust valves for 1942 automobiles (as designed at present) –

Assuming 20% less produced than in 1941 model year.....less than 0.16%.

Assuming 50% less produced than in 1941 model year.....less than 0.10%.

Gears, Axles, and Steering Parts of Chromium Steels – These parts will be made largely of chrome-molybdenum and chromium steels in many 1942 models. In certain of these cases the parts had just been shifted from nickel-bearing to chromium-bearing steels. Car production in some plants would come to a standstill if the supply of these chromium-molybdenum or chromium steels were cut off, metallurgists report, because their substitution would entail a virtually complete redesign of these parts and, as a result, of much of the chassis, and different machining and heat-treatment setups would be essential.

Per cent of July 1941 – July 1942 chromium supply needed for functional steel parts of 1942 automobiles exclusive of exhaust valves (as designed at present) –

Assuming 20% less produced than in 1941 model year.....less than 0.8%.

Assuming 50% less produced than in 1941 model year.....less than 0.5%.

Carburetor and Fuel Pump Bodies – Before

the emergency, zinc-alloy die castings were used universally for these parts. Important advantages of this material are that it produces the intricate designs required for these parts accurately, that it has the strength necessary for such important functional parts, and that little machining or processing is required after the parts are die cast.

Although carburetor and fuel-pump engineers are prepared to build these parts of cast iron or welded steel if imperative, they point out that the additional machining and processing operations necessary will not only raise the cost of the parts but will require batteries of machine tools and skilled machinists vital in our defense effort. The small amount of zinc alloy that would be saved, they contend, is not worth the tool-hours necessary to conserve it. Thus it would seem that the interests of car-maker, consumer, and national defense coincide in assuring a minimum supply of zinc alloys for carburetor and fuel-pump parts, particularly in view of the recent easing in the zinc supply situation.

Per cent of July 1941 – July 1942 zinc supply needed for carburetors and fuel pumps of 1942 automobiles (as designed at present) –

Assuming 20% less produced than in 1941 model year . . . . . less than 1%.

Assuming 50% less produced than in 1941 model year . . . . . less than 0.62%.

Roller and Ball Bearings – All these bearings used in passenger cars are made either of case-hardening molybdenum-nickel steels or through-hardening chromium steels. Substitution of steels containing neither nickel nor chromium would be most impracticable for the following compelling reasons:

1. More than half the production of anti-friction bearing companies is now utilized in defense equipment.

2. Alternate materials would result in changes in physical properties, tolerances, and so on, large enough to require extensive retooling and revision of engineering standards now in wide usage.

To produce ball or roller bearings for non-civilian use containing neither nickel nor chromium, therefore, additional plants would be necessary, requiring machine tools, dies, toolmakers, and skilled machinists urgently needed for defense.

Nickel Alloys in Electrical System – Throughout the automobile electrical system are many parts containing negligible amounts of nickel for which satisfactory alternate materials cannot be found without going to a very expensive material or extensive redesign. These parts include spark-plug wires, distributor wires, distributor springs, compensating shunts for voltage regulators, heating elements, and bi-metal elements of electrical indicators, such as temperature gages.

Per cent of July 1941 – July 1942 nickel supply needed for electrical system parts of 1942 automobiles (as designed at present) –

Assuming 20% less produced than in 1941 model year . . . . . less than 0.25%.

Assuming 50% less produced than in 1941 model year . . . . . less than 0.16%.

Special Parts – In addition to the preceding examples common to all cars, almost every car maker has special critical-material parts peculiar to his particular design in which continued supplies of material are vital to production.

An example is the main control valve body for a well-known automatic transmission, now die cast of aluminum alloy. This is a very intricate part with tortuous oil passages and cylinder and valve-stem bores. Since it is the heart of the entire transmission, accuracy is of paramount importance. It is contended that only in die-cast aluminum can this vital accuracy be attained commercially, and that alternates also either would corrode or introduce additional machining out of all proportion to the amount of aluminum saved. For this reason, if any aluminum is available, it will go into this main control valve.

Another special critical part is the nickel-alloy tube passing through the exhaust manifold which connects to the automatic choke on another line of cars. Only nickel alloys have been found to be heat- and corrosion-resistant enough for this purpose. Alternate materials for this part either would burn out quickly and lower performance, or would require design changes out of all proportion – redesigning the hot box for the choke and changing the carburetor calibration.

SAE Coming Events

Sept. 25 – 26 — National Tractor Meeting
Schroeder Hotel – Milwaukee, Wis.

Oct. 23 – 24 — National Fuels & Lubricants Meeting
Mayo Hotel – Tulsa, Okla.

Oct. 30 – 31 & Nov. 1 — National Aircraft Production Meeting (and Engineering Display)
Biltmore Hotel – Los Angeles, Calif.

Nov. 5 – 6 — West Coast Transportation & Maintenance Meeting – San Francisco, Calif.

Nov. 13 – 14 — National Transportation & Maintenance Meeting
Statler Hotel – Cleveland, Ohio

Jan. 12 – 16, 1942 — SAE Annual Meeting (and Engineering Display)
Book-Cadillac Hotel – Detroit, Mich.

Cleveland – Sept. 8

Cleveland Club; dinner 6:30 p.m. Behind the Scenes in National Defense Engineering – A. T. Colwell, vice president, Thompson Products, Inc., and president, SAE.

Detroit – Sept. 22

Hotel Statler; dinner 7:00 p.m. Design Features and Performance Characteristics of DB-601A Aircraft Engine – R. W. Young, chief engineer, Wright Aeronautical Corp.

Lt.-Col. R. B. Lord, deputy director, Bureau of Public Relations, War Department, Washington, D. C. Subject to be announced later.

Indiana – Sept. 23

Antlers Hotel, Indianapolis; dinner 6:45 p.m. Behind the Scenes in National Defense Engineering – A. T. Colwell, vice president, Thompson Products, Inc., and president, SAE. Guest – John A. C. Warner, secretary and general manager, SAE.

Metropolitan – Sept. 18

Park Central Hotel, Colonial Room; dinner 6:30 p.m. Design Features and Performance Characteristics of DB-601A Aircraft Engine – R. W. Young, chief engineer, Wright Aeronautical Corp.

Milwaukee – Sept. 12

Golf party in the afternoon, dinner following. General social evening.

Northern California – Sept. 16

Northwest – Sept. 11

Crawford's Sea Food Grill. Subject and speaker to be announced.

Oregon – Sept. 12

U. S. Army Air Base, Portland; dinner 6:30 p.m. Subject – Aviation and Motor Pools – speaker to be provided by Army Air Corps. Closed meeting for SAE members only.

St. Louis – Sept. 24

Candlelight House; dinner 6:30 p.m. Behind the Scenes in National Defense Engineering – A. T. Colwell, vice president, Thompson Products, Inc., and president, SAE. Guest – John A. C. Warner, secretary and general manager, SAE.

Southern California – No meeting

Tulsa Group – No meeting

■ Baltimore

Chairman: **Robert W. Hogan,** field representative, Ethyl Gasoline Corp.; vice chairman: **John F. Rowley, Jr.,** salesman, Warner Fruehauf Trailer Co.; treasurer: **J. S. Dagilaitis,** charge, automotive maintenance, American Brewery, Inc.; secretary: **J. W. Wheatley,** inspector, Sherwood Bros., Inc.

■ Buffalo

Chairman: **Charles E. Hathorn,** patent engineer, Curtiss Aeroplane Division, Curtiss-Wright Corp.; vice chairman: **William W. Kunz,** master mechanic, in charge of rolling stock and buildings, International Railway Co.; secretary-treasurer: **Peter F. Rossmann,** development and research engineer, Curtiss Aeroplane Division, Curtiss-Wright Corp.

■ Canadian

Chairman: **R. W. Richards,** general sales manager, Goodyear Tire & Rubber Co. of Canada, Ltd.; vice chairman: **John H. Hickey,** general parts and service manager, Chrysler Corp. of Canada, Ltd.; vice chairman, Hamilton district: **Walter R. Gayfer,** purchasing agent, International Harvester Co. of Canada, Ltd.; vice chairman, Kitchener district: **Frank H. Stafford,** sales department, B. F. Goodrich Rubber Co. of Canada, Ltd.; vice chairman, Montreal district: **Herbert R. Holder,** superintendent, automotive bus department, Montreal Tramways Co.; vice chairman, Oshawa district: **Edwin F. Armstrong,** engineering department, General Motors of Canada; vice chairman, Quebec district: **Col. F. W. Miller,** vice president, general manager, Collins & Aikman of Canada, Ltd.; vice chairman, St. Catharine's district: **James C. Wilson,** sales manager, service division, Thompson Products, Ltd.; vice chairman, Windsor district: **W. H. Cantelon,** vice president, general manager, Auto Specialties Mfg. Co. (Can.), Ltd.; treasurer: **F. Martin Buckingham,** general manager, Wallace Barnes Co., Ltd.; secretary: **Warren B. Hastings,** editor, manager, *Canadian Motorist.*

■ Chicago

Chairman: **Leonard B. Gilbert,** Chicago district manager, White Motor Co.; vice chairman: **J. Howard Pile,** editorial director, Chek-Chart Corp.; vice chairman, Aircraft Activity: **Ralph D. Edwards,** station manager, United Air Lines; vice chairman, Fuels & Lubricants Activity: **Joseph A. Moller,** head, mechanical research laboratory, assistant chief lubrication engineer, Pure Oil Co.; vice chairman, Parts and Accessories: **Paul H. Oberreutter,** president, dynamometer engineer, Mid-West Dynamometer & Engineering Co.; vice chairman, Passenger Car Activity: **Emil O. Wirth,** chief engineer, automotive carburetor division, Bendix Products Division, Bendix Aviation Corp.; vice chairman, Transportation & Maintenance and Truck & Bus Activities: **Glenn W. Johnson,** transportation manager, Bowman Dairy Co.; vice chairman, Tractor & Industrial and Diesel Engine Activities: **H. G. Smith,** chief engineer, engine division, Buda Co.; treasurer: **John A. Herlihy,** executive vice president, operations, United Air Lines; secretary: **Edward R. Barnard,** assistant director, research, Standard Oil Co. (Indiana).

■ Cleveland

Chairman: **Arthur Townhill,** engineer, Thompson Products, Inc.; vice chairman: **Charles H. Miller,** export service manager, White Motor Co.; vice chairman, Akron-Canton district: **Robert E. Gottron,** chief experimental engineer, Hercules Motors Corp.; treasurer: **Harry F. Gray,** president, chief engineer, International Piston Ring Co.; secretary: **Harry H. Hooker,** assistant chief engineer, Eaton Mfg. Co.

■ Dayton

Chairman: **Robert V. Kerley,** chief, fuel and oil test unit, U. S. Army Air Corps, Materiel Division, Wright Field; vice chairman: **James W. Carl,** superintendent of Plant, Simonds Worden White Co.; treasurer: **Earl S. Patch,** sales manager, Moraine Products Division, General Motors Corp.; secretary: **Ernest J. Stockum,** sales and estimating, G.H.R. Foundry Co.

■ Detroit

Chairman: **Tore Franzen,** experimental engineer, Chrysler Corp.; vice chairman, Aircraft Activity: Lt.-Com. **George J. Higgins,** U.S.N.R., acting director, aeronautical engineering department, University of Detroit; vice chairman, Passenger Car Activity: **Albert C. Hazard,** project engineer, Chevrolet Motor Division, General Motors Corp.; vice chairman, Passenger-Car Body Activity: **William J. Tell,** chief body engineer, Cadillac Motor Car Division, General Motors Corp.; vice chairman, Production Activity: **Kirke W. Connor,** president, general manager, Micromatic Hone Corp.; vice chairman, Junior-Student Activity: **Richard B. Sneed,** research engineer, Ethyl Gasoline Corp.; treasurer: **F. W. Marschner,** Western sales manager, New Departure Division, General Motors Corp.; secretary: **H. A. Hicks,** engineer, Chrysler Corp.

■ Indiana

Chairman: **George L. Brinkworth,** resident salesman, Aluminum Co. of America; vice chairman: **Joseph Liston,** assistant professor, aeronautical engineering, Purdue University; vice chairman: **Ronald M. Hazen,** vice president, chief engineer, Allison Division, General Motors Corp.; treasurer: **Robert C. Wallace,** assistant chief engineer, Marmon-Herrington Co., Inc.; secretary: **Harlow Hyde,** Indianapolis.

■ Kansas City

Chairman: **Harold R. Berg,** division manager, Ethyl Gasoline Corp.; vice chairman: **William B. Bassett,** district automotive engineer, Sinclair Refining Co.; secretary-treasurer: **John J. Draney,** layout and detail draftsman, Witte Engine Works.

■ Metropolitan

Chairman: **Clayton Farris,** president, Trucktor Corp.; vice chairman: **Herbert Happersberg,** national accounts division, Brockway Motor Co., Inc.; vice chairman, Aircraft Activity: **John A. Sanborn,** general manager, Manufacturers Aircraft Association, Inc.; vice chairman, Diesel Engine Activity: **M. J. Reed,** Socony-Vacuum Oil Co., Inc.; vice chairman, Fuels & Lubricants Activity: **A. L. Beall,** research engineer, Wright Aeronautical Corp.; vice chairman, Passenger Car and Body Activities: **Burton W. Elgin,** national account sales, Firestone Tire & Rubber Co.; vice chairman, Transportation & Maintenance Activity: **Robert H. Clark,** general superintendent, transportation, Consolidated Edison Co. of N. Y., Inc.; vice chairman, Student Activity: **W. W. Bishop, Jr.,** Wright Aeronautical Corp.; treasurer: **Clifford M. Larson,** chief consulting engineer, Sinclair Refining Co.; secretary: **William E. Conway,** assistant director, national accounts division, Studebaker Corp.

■ Milwaukee

Chairman: **Grover C. Wilson,** director, heat-power laboratory, University of Wisconsin; vice chairman: **N. F. Adamson,** chief engineer, Twin Disc Clutch Co.; treasurer: **Theodore L. Swansen,** tractor engineering department, Allis-Chalmers Mfg. Co.; secretary: **Robert I. Dick,** project engineer, air-cooled engines, Le Roi Co.

■ New England

Chairman: **H. B. Hawk,** sales engineer, Valvoline Oil Co.; vice chairman: **John A. Hassey,** superintendent, operations, Cities Service Oil Co.; treasurer: **Albert Lodge,** proprietor, Goodrich Oil Sales Co.; secretary: **Blythe R. Jones,** assistant division manager, Ethyl Gasoline Corp.

■ Northern California

Chairman: **Charles F. Becker,** supervisor, motor laboratory, research and development, Tide Water Associated Oil Co.; vice chairman: **Frederick W. Twining,** general manager, Twining Laboratories; vice chairman, Aircraft Activity: **William V. Hanley,** research engineer, Standard Oil Co. of Calif.; vice chairman, Diesel Engine Activity: **Hans Bohuslav,** vice president, charge of engineering, Enterprise Engine & Foundry Co.; vice chairman, Fuels & Lubricants Activity: **S. E. Onorato,** automotive engineer, fuels and lubricant division, Union Oil Co. of Calif.; vice chairman, Transportation & Maintenance Activity: **Peter Glade,** superintendent, equipment, Purity Stores, Ltd.; treasurer: **Dr. Alfred G. Cattaneo,** research engineer,

Shell Development Co.; secretary: **William S. Crowell,** San Francisco.

Northwest

Chairman: **Theodore C. Howe,** superintendent, maintenance, North Coast Transport Co.; vice chairman: **Kenneth Ayers,** lubrication engineer, Standard Oil Co. of Calif.; treasurer: **Walter J. Crane, Jr.,** engineer, Pacific Highway Transport; secretary: **Lee Ketchum,** sales engineer, Six Robblees, Inc.

Oregon

Chairman: **Earl A. Marks,** owner, manager, Earl Marks Electric Service; vice chairman: **J. R. Kessler,** manager, Oregon Parts Co.; treasurer: **Otto A. Olson,** garage manager, Portland Gas & Coke Co.; secretary: **Merrill T. Clark,** sales and service engineer, Laher Spring & Tire Corp.

Philadelphia

Chairman: **Emil P. Gohn,** test engineer, Atlantic Refining Co.; treasurer: **G. Ralph Strohl,** special equipment engineer, Autocar Co.; secretary: **C. M. Billings,** Philadelphia, Pa., division representative, auto oil sales, Gulf Oil Corp.

Pittsburgh

Chairman: **Harry W. Boord,** special representative, American Oil Co.; vice chairman: **Allen J. Imblum,** vice president, Pittsburgh Auto Spring Co.; vice chairman, Oil City: **T. G. Murphy,** chief chemist, Franklin Creek Refining Co.; treasurer: **S. G. Page,** general superintendent, Equitable Auto Co.; secretary: **C. J. Livingstone,** industrial fellow, Mellon Institute of Industrial Research.

St. Louis

Chairman: **Adam Ebinger,** superintendent of garages, St. Louis Public Service Co.; vice chairman: **George M. Bicknell,** chief engineer, Carter Carburetor Corp.; treasurer: **A. J. Minges,** design engineer, Busch-Sulzer Bros. Diesel Engine Co.; secretary: **Joseph Sunnen,** president, Sunnen Products Co.

Southern California

Chairman: **Mac Short,** vice president, engineering, Vega Airplane Co.; vice chairman: **Foster M. Gruber,** design engineer, Douglas Aircraft Co., Inc.; vice chairman, Aircraft Activity: **Gunnar Edenquist,** chief engineer, Kinner Motors, Inc.; vice chairman, Fuels & Lubricants Activity: **Wallace Linville,** chief automotive engineer, General Petroleum Corp. of Calif.; vice chairman, Passenger Car Activity: **Rex Taylor,** superintendent of maintenance, Yellow Cab Co. of Calif.; vice chairman, Transportation & Maintenance Activity: **John M. Heiman,** automotive superintendent, Cudahy Packing Co.; vice chairman, San Diego: **Donald D. Waller,** senior test engineer, Consolidated Aircraft Corp.; treasurer: **Thomas A. Watson,** associate professor in M.A., University of California; secretary: **Carl Abell,** field engineer, Ethyl Gasoline Corp.

Southern New England

Chairman: **Chester R. Wells,** designer, Pratt & Whitney Aircraft Division, United Aircraft Corp.; vice chairman: **Charles H. Calkins,** manager, gear department, Baush Machine Tool Co.; vice chairman, Aircraft Activity: **Charles W. Deeds,** president, Chandler-Evans Corp.; treasurer: **T. C. Delaval-Crow,** chief engineer, New Departure Division, General Motors Corp.; secretary: **Lester F. Campbell,** engineer, production liaison, Pratt & Whitney Aircraft Division, United Aircraft Corp.

Syracuse

Chairman: **C. F. B. Reth,** general sales manager, Aircooled Motors Corp.; vice chairman: **John P. Flannery,** assistant chief engineer, Aircooled Motors Corp.; secretary-treasurer: **Carl T. Doman,** vice president, chief engineer, Aircooled Motors Corp.

Washington

Chairman: **John H. Geisse,** consultant, Civil Aeronautics Administration; vice chairman: **A. F. Campbell,** district sales manager, Timken Roller Bearing Co.; treasurer: **Clarence S. Bruce,** automotive engineer, National Bureau of Standards; secretary: **James A. Allan,** manager, Allied Suppliers, Inc.

Tulsa Group

Chairman: **G. C. Richardson,** transportation superintendent, Indian Territory Illuminating Oil Co.; vice chairman: **H. T. Bennett,** chief chemist, Mid-Continent Petroleum Corp.; secretary-treasurer: **William F. Lowe,** secretary, treasurer, Natural Gasoline Association of America.

SAE National

TRACTOR MEETING

HOTEL SCHROEDER
MILWAUKEE, WIS.

SEPT. 25-26, 1941

TECHNICAL HIGHLIGHTS

- Substitution of Materials in the Tractor Industry
- Relationship of Tractor and Implement Engineering
- Earth-Handling Equipment
- Power Take-Off Standards and Rubber Developments

Post-War Machine No. 1?

If America becomes the granary of a ravaged post-war world, what will be the role of the tractor?

That question will be answered fully in the banquet speech climaxing two days of technical sessions.

About SAE Members

ALEX TAUB, Vauxhall power unit engineer, who last year worked in England during the period of the most violent air raids, is now in Washington assisting James Adams, OPM organizer of the Automotive Industry Advisory Committee. Mr. Taub was lent by Vauxhall to the British Air Ministry under whose auspices he returned to this country on a special mission some months ago. More recently, with permission of the BAM, he has been serving as an adviser to the OEM—and his assignment to OPM came as a result of Mr. Adams' request to the OEM.

Assistant to Vice President

K. D. Smith

K. D. SMITH, tire development engineer and for the last nine years technical superintendent of B. F. Goodrich Co. tire division, Akron, Ohio, has been named assistant to the vice president in charge of factory operations.

LT.-COL. JOHN K. CHRISTMAS was recently called to Washington from the Ordnance Proving Ground at Aberdeen, Md., where he has been directing tests and improvements on new types of combat vehicles, to head a new tank and combat-vehicle division of the Ordnance Department. In his new post, he will be in charge not only of production, but also of the design of the new light and medium tanks which will be used by the Army, as well as other types of combat vehicles.

In a recent statement concerning U. S. tank production, Col. Christmas said that we are doing in one year what it took the Nazis five years to do. American tanks are superior to those being produced in Germany, he said, they are faster and are made of better material.

The Colonel has been associated with the development of every American tank since 1924.

WILLIAM S. COWELL has been named manager of equipment sales and engineering, Canadian Raybestos Co., Ltd., Peterborough, Ont., Canada. He joined Raybestos in 1928 as field service representative, was later promoted to service engineer.

LESSITER C. MILBURN is now vice president, general manager, Bellanca Aircraft Corp., New Castle, Del. He was formerly assistant general manager, Curtiss-Wright Corp., St. Louis Airplane Division, Robertson, Mo.

WILLIAM E. ROOTES has been named deputy chairman of the Supply Council of the Ministry of Supply, England, and will act on behalf of Lord Beaverbrook, the Minister of Supply, in the latter's absence from meetings of the council. His major task will be to speed up tank production. Mr. Rootes normally controls the activities of 18 motor manufacturing and distributing companies in England, is the president of the Society of Motor Manufacturers and Traders, Ltd.

CLYDE A. CROWLEY is partner of the newly-organized Crowley & Bennett technical consulting firm, Chicago. The C&B laboratories are especially equipped to handle electro-chemical, lubrication, metallographic, and other specialized problems. Mr. Crowley was formerly director of research, Technical Service Bureau, Inc., Chicago.

Although still vice president of the Development Research Corp., **CHARLES T. STORK** was recently named president and sales manager of Aircraft Industries Corp., working from the New York branch office. The latter company is a contractor of parts for the aircraft industry.

GEORGE ARMISTEAD, JR., formerly assistant to the vice president, Republic Oil Refining Co., Houston, Tex., is now a petroleum technologist, Foster Wheeler Corp., New York City. The company he has just joined is employed in designing and building equipment for motor fuel and lubricant manufacture.

J. H. KLINE has been appointed manager of the International Harvester Co.'s motor truck sales branch for the Greater New York area. Mr. Kline, who has been manager of the company's motor truck sales branch at West Haven, Conn., succeeds the late Frank J. Harmon.

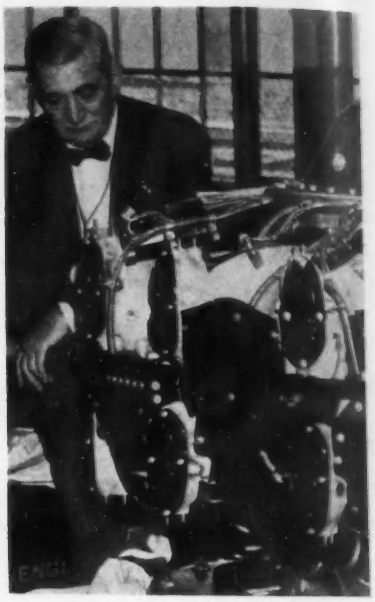
MURRAY AITKEN, assistant engineer, Kenworth Motor Truck Corp., Seattle, who was elected 1941-42 chairman of the SAE Northwest Section, has been called to service and is now located at the Naval Air

Murray Aitken

Station, Jacksonville, Fla. **THEODORE C. HOWE,** elected vice chairman of the Northwest Section, now becomes chairman for this year; and **KENNETH A. AYERS** has been unanimously elected vice chairman.

After August 1, **JOHN MITCHELL,** manager, Alloy Bureau, Carnegie-Illinois Steel Corp., Chicago, will be located in Pittsburgh.

Inspects Wright Plants



OPM's director general, WILLIAM S. KNUDSEN, is shown inspecting a Cyclone engine scheduled for installation in a U. S. Navy dive bomber during a recent tour of Wright Aeronautical Corp. engine plants, Paterson, N. J.

EARL G. GUNN, formerly consulting engineer, York, Pa., is now connected with Fram Corp., East Providence, R. I.

CLINTON BRETTELL is now doing motor transport consultant work for fleets in the greater Miami and Fort Lauderdale, Fla., areas. Mr. Brettell has been chief executive of fleets for R. H. Macy & Co., Inc., N. Y., The Texas Co. and others. Recently he resigned as manager, Motor Vehicle Department, Dellwood Dairy Co., Inc., Yonkers, to take up his present line of work.

CHARLES F. BALL, formerly chief engineer, Construction Equipment Division, Chain Belt Co., Milwaukee, is now director of engineering, Joy Manufacturing Co., Franklin, Pa. The latter company makes mechanical loaders.

ARTHUR P. EMMERT, works manager, Warner Gear Division, Borg-Warner Corp., Muncie, Ind., was elected vice president of Warner Gear Division at the Division's annual meeting.

The J. I. Case Co., Racine, Wis., has announced the appointment of **OTTO R. SCHOENROCK,** as chief engineer in charge of the general coordination of the company's engineering work, supervision of research, patents and the company laboratory and testing department. Most of Mr. Schoenrock's work in the past dozen years has been in his own consulting engineering organization, located in Chicago. He will relieve Vice President **DAVID P. DAVIES** under whose direction have been all these detailed activities.

A. H. DE LE PAULLE is assistant central progress officer with the British Purchasing Commission, New York City.

W. J. **DAVIDSON** has been made manager and **MAURICE A. THORNE,** chief engineer, of a Mobile Ordnance Development recently formed at General Motors

W. J. Davidson

Maurice A. Thorne

Corp., under the direction of **C. L. McCUEN,** vice president in charge of engineering. Mr. Davidson has just returned to duty with the corporation following completion of his work with the British Purchasing Commission to which he was on leave. Mr. Thorne had been assistant chief engineer of Oldsmobile.

JAMES DYKSTRA has been named to succeed Mr. Thorne at Oldsmobile.

James Dykstra

Mr. Dykstra has been connected with the General Motors Corp. for 19 years. He came to Lansing as a designer for the Olds Motor Works in 1925, and in 1927 was made engineer in charge of chassis design, a position he held until his present promotion.

O. L. OLSEN has returned to the Electro-Motive Corp., La Grange, Ill., as district service engineer in charge of railway and industrial equipment, in the Miami, Florida, area, having resigned from the Sinclair Refining Co., where he was employed as lubrication engineer. Before joining Sinclair, he was district service engineer in the La Grange area.

JOHN WIGGERS, former chief engineer, Moreland Motor Truck Co., Los Angeles, has joined the Crown Body & Coach Co., Los Angeles, as chief engineer and superintendent of bus chassis production.

EDWARD L. PARKER, president, Columbia Steel and Shafting Co., is one of the 15 men recently appointed by OPM to serve on a newly-organized Steel Industry Advisory Committee.

Since July 1, **LEWIS C. ORD** has been general manager, American Armament Corp., Allentown, Pa. He was formerly director, planning and production, British Air Commission, British Purchasing Commission, N. Y.

WILLIAM W. TAYLOR was recently appointed vice president and director of Prest-O-Lite Storage Battery Co., Ltd., Toronto, Ont., Canada. Mr. Taylor has held the position of secretary-treasurer and works manager since the inception of the company in 1927.

EDWARD W. UPHAM was named a member of the executive committee, at recent ASTM elections. He is chief metallurgist, Engineering Division, Chrysler Corp.

A. M. CLARK, Hercules Motors Corp., was recently elected a vice president of the Foremen's Club, Stark County, Ohio.

WILLIAM R. ENYART, president, Simmonds Aerocessories, Inc., New York City, was re-elected a vice president of the National Aeronautic Association, Washington, D. C., at its nineteenth annual convention in Louisville.

LEO S. PECKER, graduate of the College of City of New York, has been named laboratory engineer, B. G. Corp., N. Y.

F. S. CARPENTER was named to the post of production manager of the Tire Division of the United States Rubber Co., and will be located in New York City. He was formerly U. S. Rubber Co. factory manager in Los Angeles.

WILLIAM K. COOPER has been named general sales manager of Aviation Manufacturing Corp., and will direct sales activities of Spencer Heater Division, American Propeller Corp., and Lycoming Division. He was formerly general manager of the Lycoming Division.

JEROME A. CHURCH goes over to the Stromberg Aviation Carburetor Department, Bendix Products Division, Bendix Aviation Corp., South Bend, as design engineer. Formerly he was tool designer, Frigidaire Division, General Motors Corp., Dayton, Ohio.

RICHARD H. BRECKENRIDGE is now taking the test course for student engineers, General Electric Co., Schenectady, N. Y.

JOHN V. McELGIN, formerly experimental engine tester, Wright Aeronautical Corp., Paterson, N. J., recently went to the Lockland, Ohio, branch, where he will take up the position of leadman, production testing.

FREDERIC BOYES, formerly production engineer, H. A. Wilson Co., Newark, N. J., is now employed by the Wells Mfg. Co., Fond-Du-Lac, Wis.

JOHN SMITH LOTH has left the employ of the Rocky Mountain Steel Products Co., Los Angeles, where he was a draftsman, to become a junior detailer, Lockheed Aircraft Corp., Burbank, Calif.

J. CARLTON WARD, JR., has been selected to represent the SAE on the Daniel Guggenheim Medal Board of Award.

WILLIAM C. STANLIK, vice president, Franklin-Weber Motors, Chicago, and a former president of Pontiac Dealers, Inc., was recently elected vice president of the Chicago Automobile Trade Association.

HARRY T. WOOLSON, Chrysler Corp. executive engineer, has recently been appointed to membership on the SAE Ordnance Advisory Committee.

JOHN POLLITT, formerly outside representative, Rover Co., Ltd., Coventry, has been transferred from Birmingham to Yorkshire, England, as branch factory manager for the same company.

LT. ROBERT S. WOLFSOHN, formerly junior aeronautical engineer, National Advisory Committee for Aeronautics, Langley Field, Hampton, Va., is now employed by the National Bureau of Standards, Washington, D. C.

On August 15, **CORNELIUS M. O'DONOHOE,** former design engineer, U. S. Rubber Co., joined the staff of the Vega Airplane Co., Burbank, Calif., as tool engineer.

BERTIN A. BISBEE is now connected with the Brooklyn Union Gas Co. He was formerly general superintendent, Koppers Co., Brooklyn.

WALDON R. RHOADS has resigned as layout draftsman, Curtiss-Wright Corp., Robertson, Mo., to become design engineer for controls, Vega Airplane Co., Inc., Burbank, Calif.

DALE KELLY has gone to work as an engineer, Experimental Engineering Division, Mack Mfg. Co., Allentown, Pa. His former position was that of teacher, Applied Science, Brooklyn High School of Automotive Trades.

CLAYTON FARRIS, vice chairman of the SAE Metropolitan Section for the past year, ranked ninth in the New York World-Telegram hole-in-one contest at the Forest Hills Field Club, N. J., after driving a ball within

Clayton Farris

4 ft 5 in. of the cup. Off the links, Mr. Farris is president of the Trucktor Corp., Newark, and the New Jersey State Golf Association.

(*Continued on page 29*)

Meet the Services

BECAUSE so many SAE members have been called to active duty with Uncle Sam's Military Services, the editors believe that SAE Journal readers will be eager to get first-hand information on what their friends are doing in the various camps. So we wrote to them asking for photographs in uniform, and for a note explaining their present jobs. On this page we will print, month by month, portions of the letters received.

CAMP LEE, VA.

Back in the 1400's, quartermasters were couriers who rode ahead of the main body of troops to arrange for lodgings. Today, the Quartermaster Corps handles practically all feeding, housing, clothing, and transportation for the Army. Our own QMC got its start in 1775—the day Washington was proclaimed Commander-in-Chief.

Here is what Capt. Lawton has to say about the automotive branch of the modern Quartermaster Replacement Center at Camp Lee:

School For Specialists

"The QRC trains men in supply and motors. The Motor Training School, of which I am assistant director, turns out drivers, motor mechanics, and motor specialists such as welders, blacksmiths, body and sheet metal men, painters, carburetor and ignition experts, machinists, inspector-foremen, etc. The motor schools, exclusive of drivers, has about 3200 students. I have direct charge of the specialist groups; am, in addition, motor maintenance officer and coordinator of supply for the school."

– Capt. C. C. Lawton
July 29

Capt. C. C. Lawton, QMC

2nd Lt. Hyman Feldman

CAMP SHELBY, MISS.

That the Army is doing a thorough job of training its officers in the motor service branches is clearly shown in the following notes from 2nd Lt. Feldman, assistant transportation officer in charge of motor maintenance, 42nd Engineer Regiment:

Detroit Tour

"For four weeks I was sent on detached service to Detroit, to study maintenance procedures at some of the plants there. I spent one week at the General Motors plant, one week at the Chevrolet plant, one week at the Ford plant, and one week at the Chrysler plant.

"At present, I am back with my regiment and am preparing our varied assortment of rolling stock for our maneuvers which commence on July 28, and will probably last until late in October."

– 2nd Lt. Hyman Feldman
July 25

Major A. H. Denison

Writes Major Arthur H. Denison, Air Corps factory representative, now at Stearman Aircraft Division, Boeing Airplane Co.:

"My work is the inspection of aircraft and the administration of contracts in the region between the Rocky Mountains and the Mississippi River. Graduating from the Army Industrial College, Washington, D. C., Aug. 2, 1940, I went to Wright Field, Inspection Section, then two months with North American Aviation, Inc., Dallas, as Air Corps factory representative, then transferred here."

– Major Arthur H. Denison
August 7

CAMP FORREST, TENN.

It takes a mess of trucks to move an army regiment. So says Lt.-Col. Rice, in command of the 2nd Batallion, 132 Infantry:

Modern Caravan

"My command is leaving Sunday at 6 AM for the maneuvers in Ark. & La. The 33rd Division is moving by motor, the distance being about 500 miles the first three days. Some idea of the number of motor vehicles needed can be gained from the fact that 286 were assigned to move our regiment."

August 9

Lt.-Col. Fred W. Rice

SAE Aeronautical Standards Program Includes Experts of Entire Industry

UNDER the general leadership of the SAE Aeronautics Division Committee, thirty-three Subcommittees consisting of aircraft, engine, propellers, accessories and materials engineers from throughout the entire aircraft industry are working under four Subdivision Committees on a wide range of Aircraft Engine, Accessories and Equipment, Propeller, and Materials and Processes standards in accordance with the assignments and allocation of work made by the Office of Production Management. Each Subcommittee has the responsibility for coordinating its recommendations with all manufacturers and users, as well as the proper Government agency before submitting its report to its parent committee. The Subcommittees' studies cover design, installation, production, maintenance, testing and inspection problems pertinent to the particular item under consideration. Army, Navy and Civil Aeronautics Authority representation is provided for on all projects and at each stage beginning with the Subcommittees. The military coordination is usually achieved through the Aeronautical Board, which also receives all minutes and reports of each Subcommittee, the four Subdivisions, and the SAE Aeronautics Division.

The present membership of the SAE Aeronautics Division is as follows. All committees are subject to amplification from various branches of the industry as required:

SAE AERONAUTICS DIVISION

Arthur Nutt, Chairman, Wright Aeronautical Corp., Paterson, N. J.

Hall Hibbard, Vice Chairman (Aircraft), Lockheed Aircraft Corp., Burbank, Calif.

L. S. Hobbs, Vice Chairman (Engines), Pratt & Whitney Aircraft, East Hartford, Conn.

Val Cronstedt, Pratt & Whitney Aircraft, East Hartford, Conn.

J. B. Johnson, U. S. Army Air Forces, Wright Field, Dayton, Ohio.

William Littlewood, American Airlines, Inc., Municipal Airport, Jackson Heights, N. Y.

Erle Martin, Hamilton Standard Propellers, East Hartford, Conn.

The above Committee receives from the individual Subdivisions, listed below and on the following pages, the reports of the various Subcommittees when ready for final approval. Prior to this step, however, all reports will have been widely circulated to all interested manufacturers, and Government agencies for their comment and criticism. It will be noted that the four Subdivision Chairmen are also members of the Aeronautics Division.

AIRCRAFT ENGINE SUBDIVISION

Val Cronstedt, Chairman, Pratt & Whitney Aircraft, East Hartford, Conn.

R. W. Young, Vice Chairman, Wright Aeronautical Corp., Paterson, N. J.

A. T. Gregory, Ranger Aircraft Engines, Farmingdale, L. I., N. Y.

W. R. Griswold, Packard Motor Car Co., Detroit, Mich.

R. M. Hazen, Allison Div., General Motors Corp., Indianapolis, Ind.

S. K. Hoffman, Lycoming Div., Aviation Mfg. Corp., Williamsport, Pa.

Robert Insley, Menasco Manufacturing Co., Burbank, Calif.

J. W. Kinnucan, Continental Motors Corp., Detroit, Mich.

L. A. Majneri, Warner Aircraft Corp., Detroit, Mich.

C. E. Mines, Jacobs Aircraft Engine Co., Pottstown, Pa.

N. N. Tilley, Lawrance Engineering & Research Corp., Linden, N. J.

This Committee has undertaken the actual standardization work involved in (a) development of new standards where no previous standard existed, and (b) development of improved standards where the existing Government and commercial standards for engine and engine parts do not agree or are in need of revision. Through its Subcommittees, listed on the following page, it gathers and compiles all necessary information on the subjects listed, obtains a coordinated agreement from all companies and Government agencies concerned, and proposes the best possible standard or standards. Furthermore, each Subcommittee coordinates its work with that of other Subcommittees assigned to related topics, as well as other standardization groups that are interested in the particular subject. Fur-

ther coordination is assured by the fact that some men serve on more than one Subcommittee, thereby bringing first-hand information on related problems to the attention of the other committee members.

Subcommittees of the Aircraft Engine Subdivision

E-1 CARBURETOR INSTALLATIONS

F. J. Wiegand, Chairman, Wright Aeronautical Corp., Paterson, N. J.
M. E. Chandler, Chandler-Evans Corp., Meriden, Conn.
M. J. Kittler, Holley Carburetor Co., Detroit, Mich.
R. C. Palmer, Pratt & Whitney Aircraft, East Hartford, Conn.
H. G. Tarter, Bendix-Stromberg Div., Bendix Aviation Corp., South Bend, Ind.
M. A. Trisler, Allison Div., General Motors Corp., Indianapolis, Ind.

E-2 ENGINE ACCESSORY DRIVES

G. N. Cole, Chairman, Pratt & Whitney Aircraft, East Hartford, Conn.
Gustaf Carvelli, Wright Aeronautical Corp., Paterson, N. J.
C. J. McDowall, Allison Div., General Motors Corp., Indianapolis, Ind.

E-3 MAGNETOS

E. K. Von Mertens, Chairman, Pratt & Whitney Aircraft, East Hartford, Conn.
Gustaf Carvelli, Wright Aeronautical Corp., Paterson, N. J.
D. W. Randolph, Packard Motor Car Co., Detroit, Mich.
M. A. Trisler, Allison Div., General Motors Corp., Indianapolis, Ind.

E-4 SPARK PLUGS, IGNITION SHIELDING AND IGNITION CABLE

A. L. Beall, Chairman, Wright Aeronautical Corp., Paterson, N. J.
B. Clements, Wright Aeronautical Corp., Paterson, N. J.
A. T. Gregory, Ranger Aircraft Engines, Farmingdale, L. I., N. Y.
D. W. Randolph, Packard Motor Car Co., Detroit, Mich.
E. K. Von Mertens, Pratt & Whitney Aircraft, East Hartford, Conn.

E-5 STANDARD PARTS

G. N. Cole, Chairman, Pratt & Whitney Aircraft, East Hartford, Conn.
Gustaf Carvelli, Wright Aeronautical Corp., Paterson, N. J.
C. J. McDowall, Allison Div., General Motors Corp., Indianapolis, Ind.

E-6 SCREW THREADS

Gustaf Carvelli, Chairman, Wright Aeronautical Corp., Paterson, N. J.
C. J. McDowall, Allison Div., General Motors Corp., Indianapolis, Ind.
J. G. Perrin, Pratt & Whitney Aircraft, East Hartford, Conn.

E-7 INVOLUTE SPLINES

Gustaf Carvelli, Chairman, Wright Aeronautical Corp., Paterson, N. J.
G. N. Cole, Pratt & Whitney Aircraft, East Hartford, Conn.
C. J. McDowall, Allison Div., General Motors Corp., Indianapolis, Ind.

E-8 DRAFTING ROOM PRACTICES

J. G. Perrin, Chairman, Pratt & Whitney Aircraft, East Hartford, Conn.
Peter De Bruyn, Pratt & Whitney Aircraft, East Hartford, Conn.
J. H. Carpenter, Aviation Manufacturing Corp., Williamsport, Pa.
R. S. Kellogg, Packard Motor Car Co., Detroit, Mich.
C. R. Reynolds, Allison Div., General Motors Corp., Indianapolis, Ind.
P. V. Richards, Wright Aeronautical Corp., Paterson, N. J.
J. G. Schweiger, Ranger Aircraft Engines, Farmingdale, L. I., N. Y.

E-9 PRESERVATION OF ENGINES

A. P. Ayers, Chairman, Pratt & Whitney Aircraft, East Hartford, Conn.
R. L. Heath, Allison Div., General Motors Corp., Indianapolis, Ind.
H. P. Moyer, Lycoming Div., Aviation Mfg. Corp., Williamsport, Pa.
R. B. Stevenson, Davison Chemical Corp., Baltimore, Md.
M. H. Young, Wright Aeronautical Corp., Paterson, N. J.

E-10 SURFACE FINISHES

W. R. Griswold, Chairman, Packard Motor Car Co., Detroit, Mich.
G. Carvelli, Wright Aeronautical Corp., Paterson, N. J.
L. A. Majneri, Warner Aircraft, Detroit, Mich.
G. L. McCain, Chrysler Corp., Detroit, Mich.
W. J. Muller, Aviation Mfg. Corp., Williamsport, Pa.
J. G. Perrin, Pratt & Whitney Aircraft, East Hartford, Conn.

E-11 ENGINE PERFORMANCE PRESENTATION

E. F. Pierce, Chairman, Wright Aeronautical Corp., Paterson, N. J.
C. F. Bachle, Continental Aviation & Engrg. Corp., Detroit, Mich.
D. S. Hersey, Pratt & Whitney Aircraft, East Hartford, Conn.
W. R. Hopkins, Lycoming Div., Aviation Mfg. Corp., Williamsport, Pa.
T. S. McCrae, Allison Div., General Motors Corp., Indianapolis, Ind.

AIRCRAFT ACCESSORIES & EQUIPMENT SUBDIVISION

William Littlewood, Chairman, American Airlines, Inc., La Guardia Field, Municipal Airport, Jackson Heights, N. Y.
Harold Adams, El Segundo Div., Douglas Aircraft Co., El Segundo, Calif.
M. E. Chandler, Chandler-Evans Corp., South Meriden, Conn.
C. A. DaCosta, 1200 Commercial Trust Bldg., Philadelphia, Pa.
W. W. Davies, United Air Lines Transport Corp., Municipal Airport, Chicago, Ill.
David Gregg, Eclipse Aviation Div., Bendix Aviation Corp., Bendix, N. J.
J. J. Hilt, Young Radiator Co., Racine, Wis.
C. H. Hollerith, Hayes Industries, Inc., Jackson, Mich.
H. M. Hucke, RCA Mfg. Co., Inc., Camden, N. J.
C. V. Johnson, Bendix Products Div., Bendix Aviation Corp. South Bend, Ind.
Paul Kollsman, Kollsman Instrument Div., Square D Co., Elmhurst, N. Y.
W. C. Lawrence, Office of Production Management, Washington, D. C.
Erle Martin, Hamilton Standard Propellers Div., United Aircraft Corp., East Hartford, Conn.
R. L. McBrien, United Air Lines Transport Corp., Municipal Airport, Chicago, Ill.
J. M. Roth, Pump Engrg. Service Corp., Cleveland, Ohio.
H. F. Schippel, B. F. Goodrich Co., Akron, Ohio.
C. C. Shangraw, Eclipse Aviation Div., Bendix Aviation Corp., Bendix, N. J.
L. N. Swisher, Sperry Gyroscope Co., Inc., Brooklyn, N. Y.
T. R. Thoren, Thompson Products, Inc., Cleveland.
Jack Vitol, Aircraft Airworthiness Section, Civil Aeronautics Administration, Washington, D. C.
J. F. Wallace, Cleveland Pneumatic Tool Co., Cleveland, Ohio.

Extremely close coordination between the work of this Subdivision and the program of the National Aircraft Standards Committee is or will be provided by having representation from the aircraft manufacturers, on the

various committees. In general, the committees are made up from expert engineers from the accessory manufacturers, the aircraft manufacturers, and the airline operators so that each proposed standard will be acceptable.

All proposed standards developed and recommended by the Subcommittees listed below are coordinated with all interested aircraft and accessory manufacturers, airline operators, and Government agencies prior to their approval.

Subcommittees of the Aircraft Accessories and Equipment Subdivision

A-1 AIRCRAFT PUMPS

David **Gregg,** Chairman, Eclipse Aviation Div., Bendix Aviation Corp., Bendix, N. J.
J. M. **Roth,** Pump Engrg. Service Corp., Cleveland, Ohio.
T. R. **Thoren,** Thompson Products, Inc., Cleveland, Ohio.

A-2 AIRCRAFT ELECTRICAL EQUIPMENT

C. C. **Shangraw,** Chairman, Eclipse Aviation Div., Bendix Aviation Corp., Bendix, N. J.
Warren **Boughton** (rep. Western Div., NASC) Douglas Aircraft Co., Santa Monica, Calif.
A. A. **Green** (rep. Eastern Div., NASC) Vought-Sikorsky Aircraft, Stratford, Conn.
E. G. **Haven,** General Electric Co., Schenectady, N. Y.
E. E. **Minor,** Glenn L. Martin Co., Baltimore, Md.

A-3 AIRCRAFT VALVES AND FITTINGS

J. M. **Roth,** Chairman, Pump Engrg. Service Corp., Cleveland, Ohio.
F. E. **Amon,** Parker Appliance Co., Cleveland, Ohio.
L. J. **Henderson,** The Weatherhead Co., Cleveland, Ohio.

A-4 AIRCRAFT INSTRUMENTS

L. N. **Swisher,** Chairman, Sperry Gyroscope Co., Inc., Brooklyn, N. Y.
George Lewthwait, Pioneer Instrument Co., Bendix, N. J.
C. W. **Pepperman,** Lewis Engineering Co., Naugatuck, Conn.
P. F. **Weber,** Kollsman Instrument Div., Square D Co., Elmhurst, N. Y.

A-5 AIRCRAFT WHEELS, BRAKES, TIRES AND AXLES

H. F. **Schippel,** Chairman, B. F. Goodrich Co., Akron, Ohio.
C. H. **Hollerith,** Hayes Industries, Inc., Jackson, Mich.
Perry Keller, Goodyear Tire & Rubber Co., Akron, Ohio.

A-6 AIRCRAFT HYDRAULIC EQUIPMENT

Harold Adams, Chairman, El Segundo Div., Douglas Aircraft Co., El Segundo, Calif.
Donald Story, United Aircraft Products Corp., Los Angeles, Calif.
W. G. **Wood,** Lockheed Aircraft Corp., Burbank, Calif.

A-7 AIRCRAFT HEAT TRANSFER UNITS

J. J. **Hilt,** Chairman, Young Radiator Co., Racine, Wis.
K. A. **Browne,** Wright Aeronautical Corp., Paterson, N. J.
L. P. **Saunders,** Harrison Radiator Div., General Motors Corp., Lockport, N. Y.

A-8 AIRCRAFT RADIO AND RADIO SHIELDING

H. M. **Hucke,** Chairman, RCA Mfg. Co., Inc., Camden, N. J.
H. E. **Gray,** B. G. Corp., New York, N. Y.
K. G. **Strunk,** Breeze Corporations, Inc., Newark, N. J.
H. C. **Walters,** Scintilla Magneto Div., Bendix Aviation Corp., Sidney, N. Y.

A-9 AIRCRAFT AIR CONDITIONING EQUIPMENT

W. W. **Davies,** Chairman, United Air Lines Transport Corp., Municipal Airport, Chicago, Ill.
W. B. **Klemperer,** Douglas Aircraft Co., Santa Monica, Calif.
Vernon Lundquist, Northwest Airline, St. Paul, Minn.
Joseph Jerger, Curtiss-Wright Corp., Airplane Div., St. Louis, Mo.
Dr. Stephen J. Zand, Sperry Gyroscope Co., Inc., Brooklyn, N. Y.

A-10 AIRCRAFT ICE ELIMINATION EQUIPMENT

R. L. **McBrien,** Chairman, United Air Lines Transport Corp., Municipal Airport, Chicago, Ill.
W. H. **Hunter,** B. F. Goodrich Co., Akron, Ohio.
K. O. **Larson,** Northwest Airlines, Inc., St. Paul, Minn.
R. B. **Park,** Hamilton Standard Propellers, United Aircraft Corp., East Hartford, Conn.

A-11 AIRCRAFT PYROTECHNICS

C. A. **DaCosta,** Chairman, 1200 Commercial Trust Bldg., Philadelphia, Pa.
S. G. **Wiley,** New Jersey Fulgent Co., Metuchen, N. J.
Victor Willis, Triumph Explosives, Inc., Elkton, Md.

AIRCRAFT ENGINE PROPELLER SUBDIVISION

Erle **Martin,** Chairman, Hamilton Standard Propellers, United Aircraft Corp., East Hartford, Conn.
G. W. **Brady,** Curtiss-Wright Corp., Propeller Div., Caldwell, N. J.
C. S. **MacNeil,** Aeroproducts Div., General Motors Corp., Dayton, Ohio.
F. E. **Weick,** Engineering & Research Corp., Riverdale, Md.

The titles of the Subcommittees listed below effectively portray the scope and nature of the work being undertaken by the respective Subcommittees.

Again, it will be noted that some of the engineers serve on more than one Subcommittee due to the interlocking interests.

Subcommittees of the Aircraft Engine Propeller Subdivision

P-1 CUFF CLEARANCE

G. W. **Brady,** Chairman, Curtiss-Wright Corp., Propeller Div., Caldwell, N. J.
T. F. **Doherty,** Hamilton Standard Propellers, United Aircraft Corp., East Hartford, Conn.
W. L. **Greene,** Engineering & Research Corp., Riverdale, Md.
Joseph Stuart, III, Aeroproducts Div., General Motors Corp., Dayton, Ohio.
J. I. **Hamilton,** Curtiss-Wright Corp., Propeller Div., Caldwell, N. J.

P-2 CLEARANCE FOR GOVERNORS

T. F. **Doherty,** Chairman, Hamilton Standard Propellers, East Hartford, Conn.
W. J. **Wheeler,** Engineering & Research Corp., Riverdale, Md.

P-3 TEST CLUB STANDARDS

F. E. **Weick,** Chairman, Engineering & Research Corp., Riverdale, Md.
W. D. **Snell,** Engineering & Research Corp., Riverdale, Md.

P-4 DE-ICER CONNECTIONS

G. W. Brady, Chairman, Curtiss-Wright Corp., Propeller Div., Caldwell, N. J.
W. L. Greene, Engineering & Research Corp., Riverdale, Md.
J. F. Haines, Aeroproducts Div., General Motors Corp., Dayton, Ohio.
R. B. Park, Hamilton Standard Propellers, United Aircraft Corp., East Hartford, Conn.

P-5 DUAL ROTATION SHAFTS

M. C. Beebe, Chairman, Hamilton Standard Propellers, United Aircraft Corp., East Hartford, Conn.
C. W. Chillson, Curtiss-Wright Corp., Propeller Div., Caldwell, N. J.
W. L. Greene, Engineering & Research Corp., Riverdale, Md.
William Viets, Aeroproducts Div., General Motors Corp., Dayton, Ohio.

P-6 REVISION OF PRESENT STANDARDS

R. P. Lambeck, Chairman, Hamilton Standard Propellers, United Aircraft Corp., East Hartford, Conn.
William Hazlett, Aeroproducts Div., General Motors Corp., Dayton, Ohio.
J. H. Sheets, Curtiss-Wright Corp., Propeller Div., Caldwell, N. J.

P-7 RETAINING NUTS

C. S. MacNeil, Chairman, Aeroproducts Div., General Motors Corp., Dayton, Ohio.
R. P. Lambeck, Hamilton Standard Propellers, United Aircraft Corp., East Hartford, Conn.
J. H. Sheets, Curtiss-Wright Corp., Propeller Div., Caldwell, N. J.
W. D. Snell, Engineering & Research Corp., Riverdale, Md.

P-8 CONTROL OF 2-SPEED GEARS

M. C. Beebe, Chairman, Hamilton Standard Propellers, United Aircraft Corp., East Hartford, Conn.
C. W. Chillson, Curtiss-Wright Corp., Propeller Div., Caldwell, N. J.
J. F. Haines, Aeroproducts Div., General Motors Corp., Dayton, Ohio.
W. J. Wheeler, Engineering & Research Corp., Riverdale, Md.

P-9 STATIC BALANCE TEST PROCEDURE

J. H. Sheets, Chairman, Curtiss-Wright Corp., Propeller Div., Caldwell, N. J.
R. P. Lambeck, Hamilton Standard Propellers, United Aircraft Corp., East Hartford, Conn.
E. W. Morris, Aeroproducts Div., General Motors Corp., Dayton, Ohio.

AIRCRAFT MATERIALS AND PROCESSES COORDINATING SUBDIVISION

J. B. Johnson, Chairman, Materiel Div., U. S. Army Air Forces, Wright Field, Dayton, Ohio
L. D. Bonham, Lockheed Aircraft Corp., Burbank, Calif.
B. Clements, Wright Aeronautical Corp., Paterson, N. J.

Prior to launching its present comprehensive SAE aeronautical standardization program, the Aircraft Materials Division of the Society's standards committee organization had developed a large number of Aeronautical Materials Specifications known as the AMS series. This series of specifications was originally undertaken by the Metallurgical Subcommittee of the Engine Technical Committee of the Aeronautical Chamber of Commerce of America. The specifications developed by this group consist of complete procurement specifications and the chemical composition of the steels included in this series are premised upon the composition of the standard SAE Steel series and nonferrous metals. These specifications are now being adapted to the needs of the aircraft manufacturers. More than 136 separate Materials Specifications have been approved and issued and a total of more than 400,000 have been distributed to the entire aeronautical industry and interested Government agencies as well as to aircraft parts and materials suppliers. It may be noted that both of the materials committees have Army and Navy representation to effectively and readily coordinate the materials specifications with the military services.

Aircraft Engine Materials and Processes Committee

B. Clements, Chairman, Wright Aeronautical Corp., Paterson, N. J.
L. D. Bonham, Lockheed Aircraft Corp., Burbank, Calif.
C. E. Carrigan, Ranger Aircraft Engines, Farmingdale, L. I., N. Y.
P. V. Faragher, Aluminum Co. of America, Pittsburgh, Pa.
F. P. Gilligan, Henry Souther Engrg. Co., Hartford, Conn.
W. H. Graves, Packard Motor Car Co., Detroit, Mich.
A. W. F. Green, Pratt & Whitney Aircraft, East Hartford, Conn.
R. L. Heath, Allison Div., General Motors Corp., Indianapolis, Ind.
J. N. Huff, Curtiss-Wright Corp., Propeller Div., Caldwell, N. J.
J. B. Johnson, Materiel Div., U. S. Army Air Forces, Wright Field, Dayton, Ohio.
F. S. Klock, Hamilton Standard Propellers, East Hartford, Conn.
R. R. Moore, Naval Aircraft Factory, Philadelphia, Pa.
H. J. Noble, Jacobs Aircraft Engine Co., Pottstown, Pa.
C. L. Stevens, Ford Motor Co., Dearborn, Mich.
J. E. Sullivan, Bureau of Aeronautics, U. S. Navy Department, Washington, D. C.
R. D. Zonge, Lycoming Div., Aviation Mfg. Corp., Williamsport, Pa.

Airframes Materials and Processes Committee

L. D. Bonham, Chairman, Lockheed Aircraft Corp., Burbank, Calif.
B. Clements, Wright Aeronautical Corp., Paterson, N. J.
John F. Cramer, Boeing Airplane Co., Seattle, Wash.
Eric Dudley (rep. NASC) Curtiss Aeroplane Div., Buffalo, N. Y.
Charles Gallant, Jr., North American Aviation, Inc., Inglewood, Calif.
R. B. Gray, Glenn L. Martin Co., Baltimore, Md.
H. D. Hoekstra, Civil Aeronautics Administration, Washington, D. C.
J. B. Johnson, Materiel Div., U. S. Army Air Forces, Wright Field, Dayton, Ohio.
Roy A. Miller, Consolidated Aircraft Corp., San Diego, Calif.
R. R. Moore, Naval Aircraft Factory, Philadelphia, Pa.
Joseph Perina, Republic Aviation Corp., Farmingdale, L. I., N. Y.
Scott Rethorst, Vultee Aircraft Co., Vultee Field, Downey, Calif.
H. G. Runde, Vought-Sikorsky Aircraft, Stratford, Conn.
J. E. Sullivan, Bureau of Aeronautics, U. S. Navy Department, Washington, D. C.
W. L. Sutton, Fleetwings, Inc., Bristol, Pa.
R. A. Webster, Douglas Aircraft Co., Santa Monica, Calif.
J. W. Welty, Bell Aircraft Co., Buffalo, N. Y.

(*About SAE Members continued from page 23*)

ARNOLD G. LENZ has been promoted from assistant manufacturing manager in charge of the Flint, Saginaw and Bay City plants of the Chevrolet Motor Division, General Motors Corp., to assistant to **HUGH DEAN**, manufacturing manager of Chevrolet at Detroit. Mr. Lenz will have offices in Flint and Detroit.

A. G. Lenz
Assistant to Manufacturing Manager

MARTIN H. FRIEDMAN has been transferred from the Buffalo to the Columbus plant of the Curtiss-Wright Corp. where he will be stress analyst in the structure department.

RICHARD B. LEWIS, formerly with Rensselaer Polytechnic Institute, recently sailed for Lima, Peru, where he will be an engineer for Pan-American Grace Airways, Inc.

FRANK W. BAJKOWSKI, upon graduating from the University of Detroit with a Bachelor of Aeronautical Engineering degree, has been employed as engineer trainee, Lockheed Aircraft Corp., Los Angeles.

T. A. BOYD, head of the Fuel Department, General Motors Research Division, Detroit, was elected assistant treasurer of The Engineering Society of Detroit for 1941–42. Mr. Boyd has been a member of the supervisory staff of General Motors Research Laboratories since 1920.

JOHN M. ERDAHL, formerly a student of the school of engineering, University of Wisconsin, has gone to work in the Cadillac Motor Car Division, General Motors Corp., Detroit, as laboratory assistant.

Since graduating from Iowa State College, **ROBERT A. RUSK** has gone with International Harvester Co., Fort Wayne Works, Ind., as dynamometer operator.

Tri-State College graduate **SIDNEY O. CARLSON, JR.,** is now employed by International-Plainfield Motor Co., Plainfield, N. J., as engine tester.

WALTER R. WOODWARD is now a junior engineer, National Advisory Committee for Aeronautics, Langley Field, Hampton, Va. He was formerly a Purdue University student.

J. BENNETT HILL is slated as treasurer of the 102nd National Meeting, American Chemical Society, to be held at Atlantic City Sept. 8–12. He is manager, Development Department, Sun Oil Co., Philadelphia.

University of Detroit student member, **JACK D. PETERS** is now in the Maintenance Engineering Department, Pan American Airways, La Guardia Field, Jackson Heights, L. I., N. Y.

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In Military Services

LT. D. B. PEYTON, USNR, formerly with the research department, Standard Oil Co. of Indiana, has been ordered to duty at Naval Aircraft Factory, Navy Yard, Philadelphia.

WILLARD J. DANN recently received his Lieutenant's commission in the Navy and has been called to active duty at the submarine base Pearl Harbor, Hawaii.

GORDON McINTYRE, formerly manager, Technical Service Division, Imperial Oil, Ltd., Sarnia, Ont., Canada, is a Major with the Royal Canadian Engineers, Canada Base P.O., Canada.

JAMES G. BARR, formerly at General Motors Institute, Flint, Mich., is on active duty as Lieutenant, Balloon Barrage Training Center, Camp Davis, N. C.

FRANCIS T. NAKAHARA, University of California graduate, recently joined the U. S. Army Air Corps as junior engineer.

LT.-COM. C. E. EKSTROM, USN, formerly on the U.S.S. Honolulu, is now attached to the Naval Air Station, Corpus Christi, Texas.

LT. H. W. RISTEEN, USNR, has been called to active duty with the U. S. Navy, in the Department of Marine Engineering, U. S. Naval Academy, Annapolis, Md. He was formerly associate professor of mechanical engineering, Michigan College of Mining and Technology, Houghton, Mich.

LT. C. R. JOHNSON, USN, Aviation Special Service, has been appointed instructor, aircraft engines, at Massachusetts Institute of Technology. Prior to appointment he was research and technical application engineer, Shell Oil Co., Inc., San Francisco.

WILLIAM WAGAR, who recently graduated from Purdue University, is now serving in the U. S. Army.

LT. AMOS E. SHEPARD, USNR, is with the Patrol Wing Support Force, Aviation Repair Unit 2, U. S. Naval Air Station, Norfolk, Va. He was formerly designer, Pratt & Whitney Aircraft Division, United Aircraft Corp., East Hartford, Conn.

SAE Aircraft Brake Bibliography Available

The final report of the SAE Aircraft Brake Survey Committee, containing the results of a survey made for the National Research Council at the request of the National Defense Research Committee, has been completed. The Committee submitted a number of recommendations as to how a research program looking toward solving some of the serious aircraft braking problems might be undertaken. This part of the report was based upon an extensive questionnaire of the industry.

A comprehensive bibliography of aircraft brake technical literature forms a part of the report. This was compiled by the Society from all known sources, and is arranged chronologically with the more recent references at the beginning. Copies of the 28-page Brake Bibliography are available from the Society free upon request.

KENNETH LOUIS STEHLE, mechanical engineering student, Spark Plug Division, Electric Auto-Lite Co., Toledo, Ohio, and 1st Lieutenant, field artillery, U. S. Army, has been given leave of absence from his company to serve a period of extended military service.

Ohio State University student **HARRY C. THOBEN** is now a 2nd Lieutenant, proof officer, U. S. Army, Ordnance, Aberdeen Proving Ground, Md.

LT. VICTOR F. MASSA is now serving as assistant base transportation officer, Quartermaster Corps, Mitchel Field, L. I., N. Y. He was granted extended military leave by the Standard Oil Development Co., Bayway, N. J., where he was an automotive engineer.

CLYDE H. MITCHELL has been called to service as Captain, senior pilot and combat observer, U. S. Army Air Corps, Camp Beauregard, La. Before entering military service he was district manager, sales division, Gates Rubber Co., Denver, Colo.

W. S. JOHNSTON, Cadillac distributor, Trenton, N. J., has been ordered to active duty by the War Department. Mr. Johnston is a Major, U. S. Army Air Corps Reserve,

Air Corps Representative

W. S. Johnston

and will take over the post of Air Corps factory representative at the new plant of the Curtiss Propeller Division, Caldwell, N. J. His business will be conducted by his brother, T. Irving Johnston, during his absence.

CAPT. WILLIAM SMITH ROLLO has been promoted to a lieutenant-colonelcy in the Royal Engineers.

LT. L. S. PRIOR, JR., USNR, chief instructor, airplane and engine operations, U. S. Army Air Corps, Basic Flying School, Moffett Field, Calif., has been ordered to the Naval Air Station, San Juan, Porto Rico.

KENWORTHY J. THOMPSON has been called to service as 2nd Lieutenant, U. S. Army. He was formerly a Purdue University student.

DONALD L. BOWER has been ordered to active duty as 1st Lieutenant (assistant to production engineering officer) Central Air Corps Procurement District, U. S. Army Air Corps, Detroit. Formerly, he was an engineer with Wright Aeronautical Corp.

HERBERT J. GREENBERG, formerly draftsman, Hamilton Standard Propellers Division, United Aircraft Corp., East Hartford, Conn., has become a flying cadet, U. S. Naval Air Reserve, Floyd Bennett Airport, Brooklyn, N. Y.

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ANDERS G. PETTERSON, formerly designer, Bower Roller Bearing Co., Detroit, has joined Giern and Anholtt, Detroit, as engineer.

JOSEPH PERRIN is now connected with Simmonds Aerocessories, Inc., N. Y., as junior engineer.

WENDELL F. FORD is an engineering trainee, Wright Aeronautical Corp., Paterson, N. J. He was formerly a University of Oklahoma student.

Former University of California student **THOMAS F. REINHARDT,** is now employed as junior mechanical engineer for the War Department, Air Corps, Materiel Division, at Wright Field, Dayton, Ohio. He is working for the Inspection Section, Engine Model Test unit.

MERLE C. HUPPERT, Iowa State College student, is working at the General Motors Corp. research laboratories in Detroit this summer.

Former Purdue University student **MARION L. SMITLEY** is now an aircraft engineer, Holley Carburetor Co., Detroit.

VINCENT D. POHLMEYER, recent University of Detroit graduate, has become affiliated with Wright Aeronautical Corp., Paterson, N. J., as service engineer.

W. JUSTIN HARTSHORNE, recently a Pratt Institute student, is employed as junior engineer, Hyatt Bearings Division, General Motors Corp., Harrison, N. J.

DEFENSE begins on the drawing board

75% of entire Arkwright output is being bought by defense plants

Our ships – guns – tanks – planes are being built with blueprints made from Arkwright Tracing Cloths. For Master Draftsmen in key defense plants know the importance of *permanent* transparency . . . quality of finish in the tracing cloth they use in planning vital defense production. These advantages are just as important in the swift, efficient, profitable manufacture of *your* product. Write today for free working samples of the four Arkwright brands of tracing cloth. You'll find one of them is exactly right for you! Arkwright Finishing Company, Providence, Rhode Island.

Arkwright TRACING CLOTHS

Obituaries

John Martin Schreiber

John Martin Schreiber, 65-year-old general manager of street railway plant operations, Public Service Coordinated Transportation Division, Public Service Interstate Transportation Co., Newark, and an international authority on street railway transportation, died at his home in Orange, N. J., on July 18, after a six months' illness of a heart ailment.

Mr. Schreiber became widely known through his pioneering in the development of a passenger bus which can operate on either overhead electric wires or on oil fuel if no wires are available on all or part of the route covered by the bus.

Born in Ironton, Ohio, Mr. Schreiber was graduated in 1899 from Ohio State University with both mechanical and electrical engineering degrees. As an electrician he entered the employ of the Cleveland Electrical Railway Co. He was engineer in charge of drafting operations for the company when he resigned in 1903 to become assistant engineer of street railway operations for Public Service.

In 1917, he was made chief engineer; in 1920, he was appointed general manager of the Southern New Jersey division of Public Service; and in 1927, he was named general manager of plant operations for the entire Public Service street railway and bus system, which embraces the greater part of New Jersey.

During the development of the interchangeable-power bus, Mr. Schreiber made several trips to the heavily trafficked centers in England, France, and Germany to study transportation problems and engineering developments in those countries.

Mr. Schreiber joined the SAE in 1929. He was president of the American Transit Engineering Association in 1912-13, and since 1933 was chairman of the special consulting and development committee of the National Association of Motor Bus Operators.

Herman H. A. Schmidt, Jr.

The superintendent of the auto division, Francis H. Leggett & Co., died June 24. He had been affiliated with the automotive industry, as maintenance engineer, electrician and designer, for 29 years.

Joining the Greater New York Transportation Co. in 1912, as general manager in charge of overhaul and maintenance, he remained until 1915 when he went into business for himself as an automotive electrician. Nine years later he became manager of motor bus overhauling, Public Service Transportation. In 1928, he resigned to go with Ward Baking Co. as automotive engineer, designing and building electrical vehicles, and in 1930 became affiliated with the Francis H. Leggett Co.

Mr. Schmidt joined the Society in 1930.

Witt H. Braley

Witt H. Braley, field engineer, Peter A. Frasse & Co., Inc., N. Y., died June 16.

In 1912, Mr. Braley went to work for the National Tube Co., resigned three years later to become manager of the Solid Drawn Forging Co. He acquired ownership of Automotive Sales & Service in 1917 but did not devote full time to this enterprise until 1919 when he left Solid Drawn Forging Co.

After eight years of private operation he returned to the National Tube Co. as field engineer, and later, in 1936, joined the staff of Peter A. Frasse & Co., Inc.

NEW MEMBERS Qualified

These applicants who have qualified for admission to the Society have been welcomed into membership between July 15, 1941, and Aug. 15, 1941.

The various grades of membership are indicated by: (M) Member; (A) Associate Member; (J) Junior; (Aff.) Affiliate Member; (SM) Service Member; (FM) Foreign Member.

Canadian Section

Goode, H. M., Sgt. (A) Royal Canadian Air Force, No. 4 S.F.T.S., Saskatoon, Sask.

Holesek, Martin A. (J) designer, layout man, General Motors of Canada, Ltd., Oshawa, Ont. (mail) Hotel Genosha.

Leach, Jack Reginald (A) assistant secretary, treasurer, Thompson Products, Ltd., 37 Louth St., St. Catherines, Ont. (mail) Thompson Products, Ltd., Box 217.

Chicago Section

Bobbish, Michael George (A) lubrication salesman, Macmillan Petroleum Corp., 624 S. Michigan Ave., Chicago.

Briscoe, Maurice Arrington (A) Air Corps inspector, U. S. Army, Air Corps, Studebaker Corp., Aviation Division, South Bend, Ind.

Cernota, Henry R. (J) garage foreman, maintenance, Arthur Dixon Transfer Co., 1317 S. State St., Chicago (mail) 2635 Harvey Ave., Berwyn, Ill.

Milz, Harold (M) chief engineer, Mercury Mfg. Co., 4044 S. Halsted St., Chicago (mail) 1834 Summerdale Ave.

Siegel, Bruno Richard (J) traveling inspector, CFR engines, Sinclair Refining Co., East Chicago, Ind. (mail) 4641 Johnson Ave., Hammond, Ind.

Cleveland Section

Bartlett, Kenneth M. (M) research metallurgist, Thompson Products, Inc., 2196 Clarkwood Rd., Cleveland (mail) 1439 Dorsch Rd., South Euclid, O.

Bower, Milton R. (A) manager, lube sales, Standard Oil Co. (Ohio), 1722 Midland Bldg., Cleveland.

Clark, Charles William (A) chief draftsman, Cleveland Steel Products Corp., 7306 Madison Ave., Cleveland.

Gerber, Robert Ernest (J) layout man, Thew Shovel Co., Lorain, O. (mail) 1308 Lake Ave., Elyria, O.

Larson, James Edward (J) draftsman (detailer), Moto-Crane Division, Thew Shovel Co., E. 28th St. & Fulton Rd., Lorain, O. (mail) 749 Cleveland Ave., Amherst, O.

Mulcahy, B. Mark (A) editor, "Friendly Forum," Thompson Products, Inc., 2196 Clarkwood Rd., Cleveland.

Musgrave, F. F. (M) director, chemical research, Lubri-Zol Corp., Wickliffe, O.

Newton, John Anthony (J) service engineer, Thompson Products, Inc., 2196 Clarkwood Rd., Cleveland (mail) 2206 Ashland Rd.

Riley, Edward Paul (M) chief chemist, Thompson Products, Inc., 2196 Clarkwood Rd., Cleveland.

Tobin, Paul E. (A) sales manager, White Motor Co., 842 E. 79th St., Cleveland.

Dayton Section

Berger, Adolph L. (S M) mechanical engineer, Air Corps, Materiel Division, Wright Field, Dayton (mail) 49 W. Third St.

Holliday, Theodore B. (S M) associate electrical engineer, U. S. Army, Air Corps, Wright Field, Dayton (mail) R. R. 7, Box 260.

Junker, Alex J. (M) assistant chief engineer, Croslet Corp., 1329 Arlington St., Cincinnati, O. (mail) 876 LaFayette Ave.

Detroit Section

Babcock, Charles W. (M) consulting engineer, 1122 Detroit Bank Bldg., Detroit.

Baker, Thomas L. (M) assistant to general manager, National Stamping Co., 630 St. Jean Ave., Detroit.

Boales, William G. (A) owner, William G. Boales & Associates, 6429 Hamilton Ave., Detroit.

Bolton, Harry G. (M) assistant chief engineer, Marvel-Schebler Carburetor Division, Borg-Warner Corp., Flint, Mich. (mail) 817 E. Fifth St.

Dempsey, Arthur James II (J) test engineer, Continental Aviation & Engrg. Corp., 1206 Algonquin, Detroit (mail) 1116 Iroquois.

Horvath, Joseph (J) draftsman, Vickers, Inc., 1400 Oakman Blvd., Detroit (mail) 7816 Freda, Dearborn, Mich.

Lutz, Frederick B. (A) salesman, Budd Wheel Co., 12141 Charlevoix Ave., Detroit.

Nims, Paul Theodore (J) research engineer, Chrysler Corp., Detroit (mail) 630 Parkview Dr.

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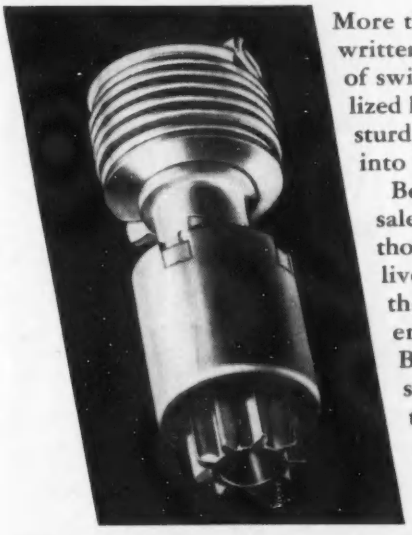

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Pittinger, A. Lincoln (J) sales engineer, Norma-Hoffmann Bearings Corp., Stamford, Conn. (mail) 3308 Eaton Tower, Detroit.

Searight, W. H. (M) vice president, secretary, Western Cataphote Corp., 958 Wall St., Toledo, O.

Thomas, Edmund A. (M) sales engineer, Thompson Products, Inc., 7881 Conant Ave., Detroit.

Toot, David F. (M) engineer, Chrysler Corp., 12800 Oakland Ave., Highland Park, Mich. (mail) 130 Massachusetts Ave.

Woodward, Arthur A. (A) experimental process engineer, Micromatic Hone Corp., 1345 Milwaukee Ave., E., Detroit.

Indiana Section

Bender, Arthur, Jr. (J) engineering department, Delco-Remy Division, General Motors Corp., Anderson, Ind.

Cook, Raymond F. (M) tool engineer, designer, Curtiss-Wright Corp., Indianapolis Division, Indianapolis (mail) 531 N. Spring St., Greenfield, Ind.

Cripe, Gene H. (J) design draftsman, Noblitt-Sparks Industries, Inc., Columbus, Ind. (mail) 2204 Caldwell Dr.

Dougherty, Floyd G. (J) junior engineer, Allison Division, General Motors Corp., Indianapolis.

Evans, Robert (J) chief tool designer, Wallace Tool & Die Co., 916 Pierson St., Indianapolis.

Harvey, Robert R. (J) general draftsman, Allison Division, General Motors Corp., Indianapolis (mail) 29 N. Sherman Dr.

Holbrook, Nathan Wiley (J) tool designer, Allison Division, General Motors Corp., Indianapolis (mail) 106 W. North St.

McNeely, Edward Charles (J) tool and gage engineer, Merz Engrg. Co., 200 S. Harding St., Indianapolis.

Kansas City Section

Tobin, Frank E. (A) aviation engineer, The Texas Co., 135 E. 42nd St., New York City (mail) Phillips Hotel, Kansas City, Mo.

Metropolitan Section

Bixby, Willard Durant (M) vice president, United Parcel Service, 331 E. 38th St., New York City.

Brault, Andre R. (J) draftsman, Sperry Gyroscope Co., Inc., Research Laboratory, Garden City, L. I., N. Y. (mail) 34 Willis Ave., Mineola, L. I., N. Y.

Donaldson, John Shearman (M) research engineer, Donaldson Piston Corp., 11 Park Pl., New York City (mail) 112-15 175th St., St. Albans, L. I., N. Y.

Fedorowski, Joseph G. (J) designing engineer, Grumman Aircraft Engrg. Corp., Bethpage, L. I., N. Y. (mail) 590 Milford St., Brooklyn, N. Y.

Forbes, Thomas R. (A) partner, A & T Auto Parts, 42-01 Northern Blvd, L. I. City, N. Y. (mail) 56-17 215th St., Bayside, L. I., N. Y.

Glover, John E., Jr. (M) staff engineer, development group, Republic Aviation Corp., Farmingdale, L. I., N. Y. (mail) 104-12 219th St., Queens Village, L. I., N. Y.

Heigis, Henry E. (M) manager, engineering department, Walter Kidde & Co., Inc., 60 West St., Bloomfield, N. J. (mail) 23 Gilbert Pl., West Orange, N. J.

Jordanoff, Assen (A) author, 125 E. 63rd St., New York City.

Kalmin, Samuel (A) fleet maintenance superintendent, Hygrade Food Products Corp., 810 Frelinghuysen Ave., Newark, N. J. (mail) 1342 Fremont Pl., Elizabeth, N. J.

Kramme, Paul E. (A) president, P. E. Kramme, Inc., Monroeville, N. J.

Kruk, John M. (M) designer, Breeze Corporations, Inc., Newark, N. J. (mail) 36 Grunwald St., Clifton, N. J.

Miller, Wendell C. (J) machine designer, Wright Aeronautical Corp., Paterson, N. J. (mail) 17 Rynda Rd., South Orange, N. J.

Nogueire, Henry Roussell (A) service representative, General Motors Corp., Foreign Distributors Division, 1775 Broadway, New York City (mail) 73-12 35th Ave., Jackson Heights, L. I., N. Y.

O'Neil, Larry E. (J) junior mechanical engineer, War Department, Air Corps, Wright Field, Dayton, O. (mail) 327 Upper Blvd., Ridgewood, N. J.

Pope, John Clifford (M) department manager, Ethyl Gasoline Corp., 405 Lexington Ave., New York City (mail) Box 390, Yonkers, N. Y.

Sheets, Jack H. (J) project engineer, Curtiss Propeller Division, Curtiss-Wright Corp., Caldwell, N. J. (mail) 10-04 Bellair Ave., Fairlawn, N. J.

Van Valkenburgh, Hugh (J) student engineer, Ranger Aircraft Engines, Division of Fairchild Engine & Airplane Corp., Farmingdale, L. I., N. Y. (mail) 270 Conklin.

Willis, Albert B., Jr. (A) automotive engineer, Socony-Vacuum Oil Co., Inc., 15 Washington St., Newark, N. J. (mail) 36 Terrace Ave., Nutley, N. J.

Milwaukee Section

Obenberger, Robert Andrew (A) experimental engineer, Waukesha Motor Co., Waukesha, Wis.

(*Concluded on page 34*)

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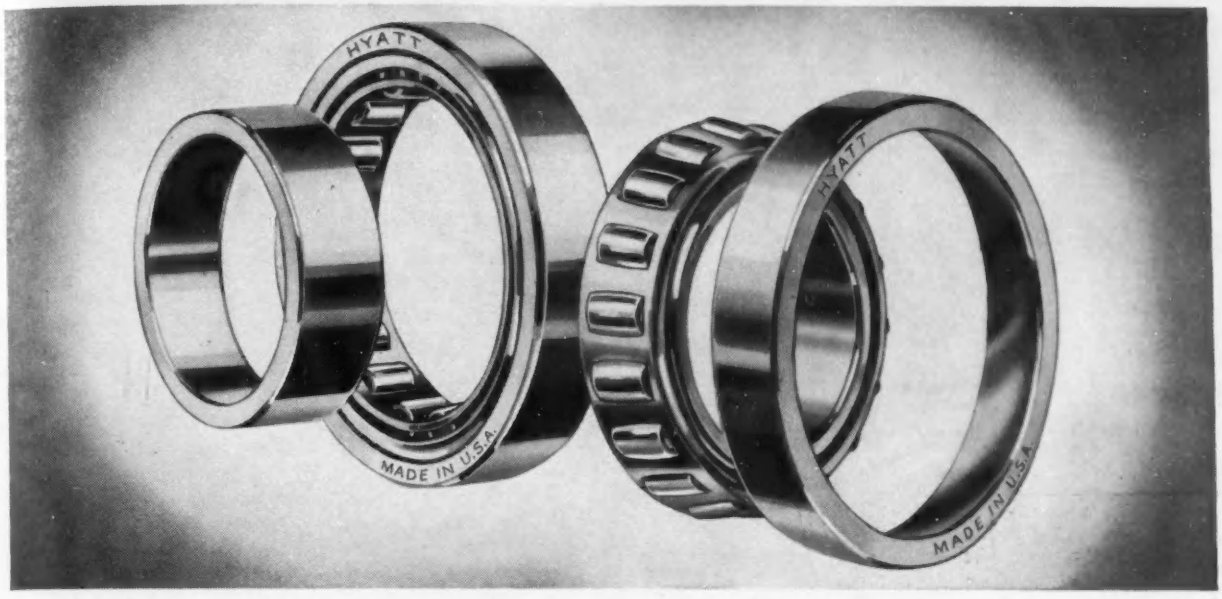

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Conley, E. T., Jr., Capt. (S M) U. S. Army, Hq. VI Army Corps, Providence, R. I.

Northwest Section

Davies, Claude W. (A) head sales engineer, Standard Oil Co. of Calif., Henry Bldg., P. O. Box 1899, Seattle, Wash.

Kasper, Rudolph Howard (A) chief inspector, Kenworth Motor Truck Corp., 1263 Mercer St., Seattle, Wash. (mail) Route 2 Kent, Wash.

Philadelphia Section

Ambler, John D. (M) engineer, Auto Engrg. & Machine Co., 4916 Germantown Ave., Philadelphia.

Moore, Clarence W. (M) chief engineer, United Specialties Co., Mitchell Division, Philadelphia (mail) 45 Lafayette Ave., Roslyn, Pa.

Rothpletz, Byron (M) supervisor, automotive maintenance, Atlantic Refining Co., 3144 Passyunk Ave., Philadelphia (mail) 109 Decator Rd., Oakmont, Upper Darby, Pa.

St. Louis Section

Miner, John A. (M) engineer in chief research & special development, Allis-Chalmers Mfg. Co., Springfield, Ill. (mail) 841 S. Park Ave.

Moulder, Walter J. (M) chief inspector, St. Louis Airplane Division, Curtiss-Wright Corp., Robertson, Mo.

Slattery, Robert O. (M) sales engineer, Shell Oil Co., Inc., Shell Bldg., St. Louis, Mo. (mail) 832 Glen Elm Drive, Glendale, Mo.

Southern California Section

Barickman, Harold Gilbert (J) liaison engineer, Lockheed Aircraft Corp., Burbank, Calif. (mail) 562 E. Palm Ave.

Buxton, Jarvis C. (J) tool designer, Vega Airplane Co., Burbank, Calif. (mail) 122½ E. Chestnut St., Glendale, Calif.

Kimball, John B. (M) assistant project engineer, Vultee Aircraft, Inc., Downey, Calif. (mail) 1726 LaSenda Pl., South Pasadena, Calif.

Remy, Douglas R. (J) draftsman, North American Aviation, Inc., Inglewood, Calif. (mail) 4264 Degnan Blvd., Los Angeles.

Roberts, Ned Louis (J) shop liaison junior engineer, Vega Airplane Co., Burbank, Calif. (mail) 230 Orizaba Ave., Long Beach, Calif.

Southern New England Section

McCarthy, Calvin Deane (J) test engineer, Hamilton Standard Propellers, Division of United Aircraft Corp., East Hartford, Conn. (mail) 263 Hartford Ave., Wethersfield, Conn.

Oppe, Howard Charles (J) assistant secretary, G & O Mfg. Co., New Haven, Conn. (mail) Box 1860.

Syracuse Section

Burrows, W. F. (J) experimental engineer, Aircooled Motors Corp., Syracuse, N. Y.

Fogarty, Geo. E. (A) engineer, Seneca Falls Machine Co., Seneca Falls, N. Y.

Washington Section

Barzynski, Joseph E., Brig.-Gen. (S M) chief, motor transport division, U. S. Army, Office of the Quartermaster General, Washington (mail) 4456 Q St., N. W.

Raabe, Norman C. (S M) automotive engineer, charge of Vocational Training, Civilian Conservation Corps, Federal Security Agency, Office of the Director, Washington (mail) 1112 16th St., N. W.

Wichita Section

Zurawinski, Mitchell (J) project engineer, Cessna Aircraft Co., Wichita, Kan. (mail) 519 S. Chautauqua Ave.

Outside of Section Territory

Gladden, Charles A., Jr. (J) test engineer, Aircraft Engine Division, Continental Motors Corp., Muskegon, Mich. (mail) 126 Delaware St.

Foreign

Chapman, Clifford Charles (J) draftsman, Rolls-Royce, Ltd., Derby, England (mail) 8 St. Peters Ave., Rushden, Northants, England.

Sheflin, Bob W., draftsman, White Motor Co., Cleveland.

Dayton Section

Eldridge, John J., owner, Buckeye Service & Supply, Cincinnati, Ohio.

Detroit Section

Burleigh, Manferd, president, Great Lakes Greyhound Lines, Inc., Detroit.

Butterfield, J. P., engineer, Chrysler Corp., Highland Park, Mich.

Klein, Benjamin J., chief inspector, C. M. Smillie & Co., Detroit.

Tollzien, Ward C., sales, Spring Perch Co., Inc., Lackawanna, N. Y. (mail) 509 Stephenson Bldg., Detroit.

Wiseman, William A., assistant chief engineer, Warner Aircraft Corp., Detroit.

Indiana Section

Davis, Arthur Marshall, project engineer, Allison Division, General Motors Corp., Indianapolis.

Hensel, F. R., Dr., chief metallurgist, P. R. Mallory & Co., Inc., Indianapolis.

Metropolitan Section

Hoyt, W. Bradford, materials engineering, M. W. Kellogg Co., New York.

Parker, Willard Wood, engineer, Curtiss Propeller Division, Curtiss-Wright Corp., Caldwell, N. J.

Walter, Gustave, owner, G. Walter Machine Co., Jersey City, N. J.

Milwaukee Section

Brudenell, Thomas F., layout and design draftsman, Kohler Co., Kohler, Wis.

Wolfe, Myron C., CFR operator and head test man, Waukesha Motor Co., Waukesha, Wis.

New England Section

Johnson, Wilfrid E., in charge of mechanical design, Supercharger, Engineering Department, General Electric Co., Lynn, Mass.

Pepin, A. J., chief metallurgist, Wyman-Gordon Co., Worcester, Mass.

Northern California Section

Othman, T. E., Lt., U. S Army, 13th Engineer Branch, Fort Ord, Calif

Thorne, Elrick, Air Reduction Sales Co., Emeryville, Calif.

Northwest Section

Egbert, Harry E., assistant superintendent of maintenance, Boeing Airplane Co., Seattle, Wash.

Pontius, Harold E., inspector, Kenworth Motor Truck Corp., Seattle, Wash.

Shults, Louis Ralph, diesel engine sales, Buda Engine Sales & Service, Seattle, Wash.

Southern California Section

Lewis, William Drew, chief tool designer, Timm Aircraft Corp., Van Nuys, Calif.

Williams, W. E., assistant foreman, Pacific Greyhound Lines, Los Angeles.

Zivolich, Edward, loftsman, Consolidated Aircraft Corp., San Diego, Calif.

Southern New England Section

Blakley, Carl Frederick, test inspector, Pratt & Whitney Aircraft, division of United Aircraft Corp., East Hartford, Conn.

Hayden, John D., sales engineer, Whitney Chain & Mfg. Co., Hartford, Conn.

Leas, Lawrence, engine test inspector, Pratt & Whitney Aircraft, division of United Aircraft Corp., East Hartford, Conn.

Washington Section

Forsyth, Archibald Graham, chief designer (engines), Fairey Aviation Co., Middlesex,

(*Concluded on page 36*)

APPLICATIONS Received

The applications for membership received between July 15, 1941, and Aug. 15, 1941, are listed below. The members of the Society are urged to send any pertinent information with regard to those listed which the Council should have for consideration prior to their election. It is requested that such communications from members be sent promptly.

Baltimore Section

Koci, Ferdinand Joseph, internal combustion engineman, U. S. Naval Engineering Experiment Station, Annapolis, Md.

Tyler, William E., U. S. Army Headquarquarters Third Corps Area, Hearst Tower Bldg., Baltimore.

Buffalo Section

Stupar, Max, Bell Aircraft Corp., Buffalo.

Canadian Section

Ironside, John, service and installation, F. H. Hopkins & Co., Ltd., Montreal, Que.

Ksieski, Kazimierz, group leader, engineering department, DeHavilland Aircraft of Canada, Ltd., Toronto, Ont.

Morris, Russell L., garage superintendent, John Labatt, Ltd., London, Ont.

Chicago Section

Dunn, William John, sales manager, Hydraulic Controls, Inc., Chicago.

McRoberts, James C., project engineer, Radial Diesel Engine Division, Buda Co., Harvey, Ill.

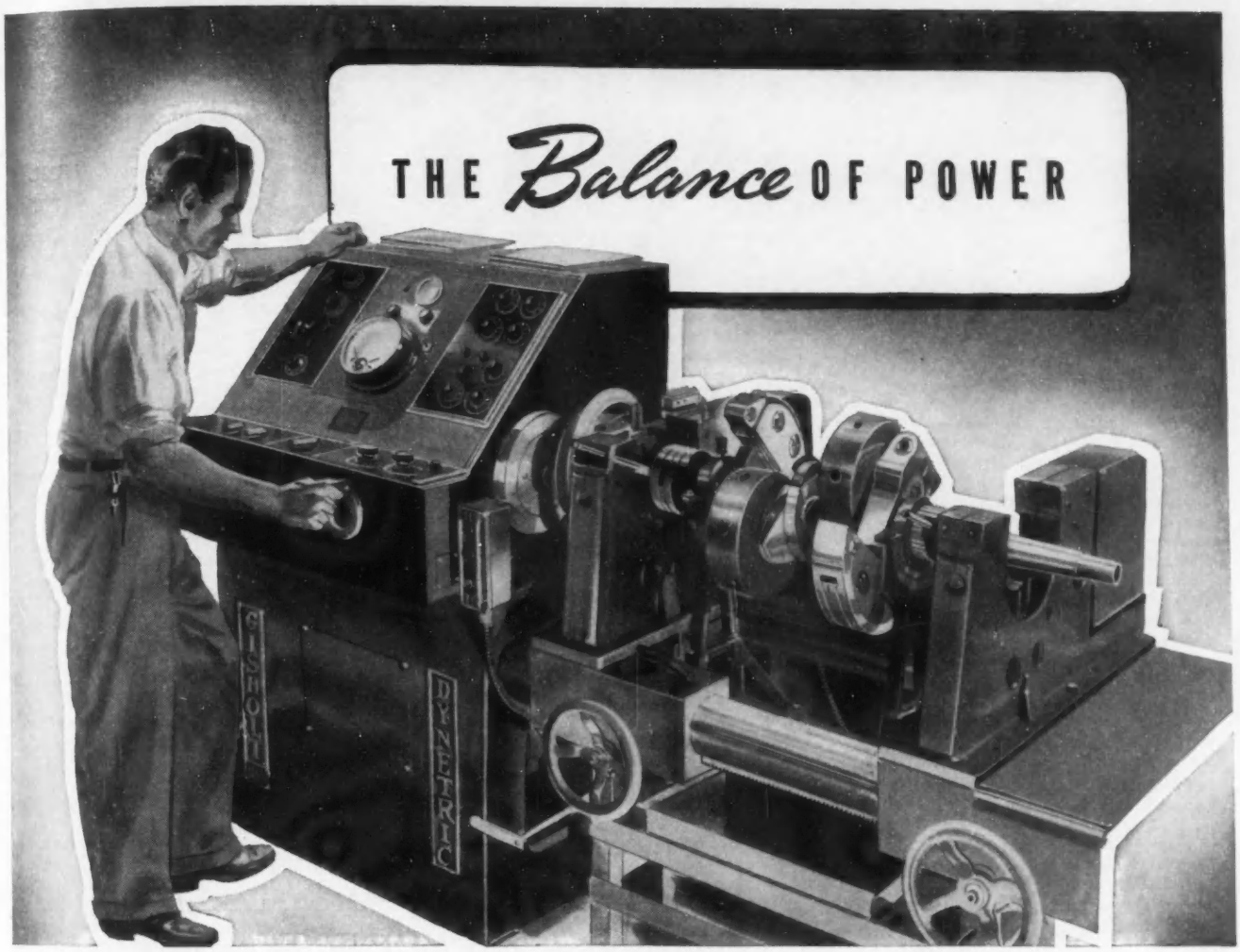
Polko, Peter Paul, designing engineer, gas power engineering department, International Harvester Co., Chicago.

Wallace, Francis Lloyd, Capt., United Air Lines Transport Corp., Chicago.

Cleveland Section

Brown, Robert Vaughan, assistant professor, Case School of Applied Science, Cleveland.

Eberly, Walter C., special machine designer, Thompson Products, Inc., Cleveland.



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(*Concluded from page 34*)

England. (mail) British Purchasing Commission, Washington, D. C.

Hill, E. Govan, president, Automatic Shifters, Inc., Richmond, Va.

Jackson, Charles H., assistant radio engineer, Office of Chief Signal Officer, War Dept., Washington, D. C.

Moore, Charles S., mechanical engineer, National Advisory Committee for Aeronautics, Langley Field, Va.

Outside Section Territory

Dunham, Elmer J., chief engineer, Clark Tructractor Division, Clark Equipment Co., Battle Creek, Mich.

Holmes, Henry W., superintendent of maintenance, Akers Motor Lines, Inc., Gastonia, N. C.

McAlexander, Albert W., shop foreman, Delta Implement Co., Greenville, Miss.

Moreau, Henry Adolphe, superintendent of operations, National Airlines, Inc., Jacksonville, Fla.

Musser, Charles William, chief engineer, Jubilee Mfg. Co., Omaha, Neb.

Oddy, Edward P., manager, Plymouth plant, McCord Radiator & Mfg. Co., Plymouth, Ind.

Young, William A., Jr., director and tool and die designer, Lyons Machine & Tool Co., Muskegon, Mich.

Foreign

Bassett, Henry Norman, chief chemist, Buenos Aires Great Southern Railway and Buenos Aires Western Railway, Buenos Aires, Argentina.

Bowden, Benjamin George, assistant body engineer, Humber Limited, Coventry, England.

Treen, J. Paul, owner, manager, Simplex Mfg. Co., New Orleans, La.

About Authors

(*Concluded from page 13*)

■ *Co-author* R. P. DINSMORE *(M '41) is development manager of The Goodyear Tire & Rubber Co., a position he has held for the past two years. All in all he has been with Goodyear 26 years and has spent most of that time in experimental and development work. He received his B.S. in chemical engineering from M. I. T. in 1914, and in 1940 was awarded an honorary degree of Doctor of Engineering from the Case School of Applied Science. Mr. Dinsmore has contributed numerous papers to technical societies and wrote a chapter of Jerome Alexander's book on "Colloid Chemistry."*

■ JOHN R. MARKHAM, *in charge of the operation of the Wright Brothers Memorial Wind Tunnel at the Massachusetts Institute of Technology, is an associate professor of aeronautical engineering of the Institute. He is also special consultant for the United States Army Air Corps and the United Aircraft Corp.*

■ *To obtain certain of the information and photographs used in his paper,* R. L. McBRIEN *(J '37), project engineer on aircraft and accessories, United Air Lines Transport Corp., rode as observer on numerous scheduled trips and on special flights into regions for which icing conditions were forecast. Testing aircraft de-icing equipment has been his specialty. Joining United Air Lines in 1934, he worked in the instrument department at the company's Cheyenne, Wyo., repair base, and three years later was transferred to the engineering department in the general office, Chicago, where he became project engineer. Mr. McBrien received his B.S. in mechanical engineering from the University of Oklahoma, 1933.*

■ *Among the accomplishments of* DR. LORIN B. SEBRELL, *manager of the research and new products department, The Goodyear Tire & Rubber Co., is his pioneering and development work in the field of organic accelerators. Other special fields include his researches on various rubber derivatives and synthetic rubbers. Dr. Sebrell was graduated from Mount Union College with a science degree in chemistry, after which he took graduate work at Wisconsin and Ohio State Universities, where he received his master and doctor degrees. In 1919, he joined Goodyear as a research chemist and was promoted to his present position in 1928.*

■ J. P. STEWART *(M '41) is manager of the Supercharger Sales Department, Elliott Co. which handles exhaust-gas turbo-chargers for the Buchi system, as well as other methods of supercharging internal-combustion engines. Mr. Stewart graduated from Cornell University as an M.E. in 1928. Since that time he has been continuously with the Elliott Co., in the capacity of apprentice, sales engineer in the Centrifugal Blower Department (specializing in blowers and compressors for general industrial and process applications), and finally assistant manager of that department in 1940. It was a year later that he became manager of Supercharger Sales.*

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